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XUM

# When Is a Wall Scraper *not* A WALL SCRAPER?

When a tool successfully performs the combined work of an Underreamer, a Wall Hook, a Slip Socket and a Mill, you do not usually call it a Wall Scraper, and, frankly, we do not recommend the Baker Rotary Wall Scraper as a "tool of all trades" but . . . any tool which will cut the Wilcox Sand and Lime, and then do the job outlined below, has earned a chance to prove its merit in your wells.

Read the following report of a Baker Field Salesman—you will find it interesting:

BAKER OIL TOOLS, Inc.

SALESMAN'S DAILY REPORT DATE 2/28/34.

| COMPANY AND ADDRESS | FULL NAME AND POSITION | FIELD |
|---|---|---|
| West Gate Oil Co. | Shortie Nelson. Supt. | Okla. City |

Ordered a # 34 Scraper with 10" Blades. Started tool in hole at 4 P.M. They have 9" set at 6350.Bottom of hole6530'
They dropped a 6" Bailer from top of hole. And have run everything from a Slip Socket to a Mill and have had no luck. What Nelson Needed was our Wall Hook but as I did not have one I talked him into running the Scraper to see if we couldnt knock the Bailer to bottom. We started underreaming at the Bottom and worked up, after doing this we came up 10Ft. above the top of the fish and underreamed to within 10' of bottom or where we had been one but could not get back to bottom as we had done just what they wanted and that was knock the Bailer to bottom or what is left of it.So they can pick up the pieces with a Basket which they are running in now.
Shortie Nelson was very much pleased with the Scraper as it did what He and all the others around here say that it wont do and that is CUT the WILCOX Sand and Lime. According to there drilling Report the Scrapercut 10" of Lime and 50' of Wilcox Sand from 8" to 10" and it was also fighting Iron all the way also. The Blades were out of Gage justa fraction over a 1/4". Tool was in the Hole from 7P.M. until 94.M. The diamond Point showed considerable iron marks as well as the blades but they did not refuse to open with this iron in the hole.
I stayed on the Job until it was done as Nelson insisted I do so.

BAKER OIL TOOLS, Inc.

SALESMAN'S DAILY REPORT DATE 3/2/34

| COMPANY AND ADDRESS | FULL NAME AND POSITION | FIELD |
|---|---|---|
| West Gate Oil Co. | Shortie Nelson, Supt. | Okla. City |

Well the Old Scraper came out on top. After running the Scraper as per my report of 2/28. They run in a Basket and recovered a bucket about a third full of iron in pieces from the size of a quarter to the size of your fist. Went in the second time and recovered about the same amount which had a piece of the Dart and two rivets which showed that they had about all of the Bailer. Ran a Bit in and made 20' and never had any trouble with iron. Shortie Nelson is one of the very few here who beleive in the Scraper and he had to be showed. But he is a booster now.The Scraper actually cut that bailer up in small pieces. BELEIVE IT OR NOT BUT I HAVE THE PROOF. Then they holler about the formation being too hard.

Note those two last lines—"The scraper actually cut that bailer up in small pieces"! Doesn't that sound as though the Baker Wall Scraper was strong enough and safe enough for the formations you encounter?

And here's the rest of this amazing story:

REPORT

BAKER ROTARY HYDRAULIC EXPANSION WALL SCRAPER

DATE March 1, 1934

1. Company West Gate Oil Co.
2. Address of Division or Head Office 705 Ramsey Tower Bldg., Oklahoma City
3. Who recommended and ordered ? C. C. Nelson, Supt.
4. Under whose supervision was equipment run ? C. C. Nelson
5. Location of well: North End. Oklahoma City Field. Name and number Carey #4
6. Is supply store through which equipment was sold capable of furnishing service on parts ?
7. Purpose for which run: To knock 6" bailer to bottom which had been sidetracked and they wanted to get the Bailer out as it is in the Wilcox Sand and would give trouble later in cleaning out.
8. Size of hole before using 8" after using 10"
9. Characteristics of formation Lime and Wilcox Sand.
10. Size Numbers of Wall Scrapers used # 34.
11. Number and gage size of Blades used 1 Set of 10" Blades.
12. Were Blades factory built ? Yes. Outside rental ?
13. Condition of Blades after use Good.
14. Condition of Wall Scraper Body and Parts after use Plunger Link Rod was pretty badly Cut from Circulation Balance of Parts were o.k.
15. Date Wall Scraper was first run into hole 2/28/34 Time 4 P.M. a.m/p.m
16. Total time consumed to complete operation 20 Hours counting Round Trip.
17. Time consumed for each run and work accomplished
18. Did Wall Scraper accomplish everything expected of it ? Yes.
19. If not, to what may did it fail ?
20. Was it the fault of Wall Scraper ? Or, manner of operation ?
21. What were the practical results of the work accomplished ? Dislodged Bailer and slivers of Iron from walls of hole to Bottom so that the Co. can either mill them up or fish them out.
22. If results were particularly good, can you get a photograph (8x10) ?
23. Can you get a testimonial letter ?
24. May we pass information on to other operators ? Yes.
25. Was equipment altered to accomplish some special purpose ?
26. If so, to what way ?

Reported by R. L. Blowers

*NOTE: Use the reverse side of sheet for additional space on any answers.*

## EVERYDAY USES

We hope that you will never have to use a Baker Wall Scraper as described above, but we do sincerely suggest that you use it for . . .

1. Underreaming to any diameter up to twice the diameter of its body, for easier, safer setting of casing and setting and pulling liners;
2. Scraping the productive sand to dispose of plastered rotary mud, and to enlarge the area for greater recovery;
3. Starting a wide shoulder as the first step in bringing a crooked hole back to vertical;
4. Scraping the walls of the hole before setting casing, to obtain a better bond between formation and cement;
5. Reaming out old cement when re-cementing, to insure a perfect bottom-water shut off; and many other uses.

●

*Specifications, illustrations, performance records and prices are set out in a special bulletin. Send your name and address for complete information.*

●

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# Market Is Strengthened as Refiners Buy Distress Gasoline; Field Operations Continue to Gain

By ANDREW M. ROWLEY

THE general market situation strengthened early this week as refiners, acting upon the recommendation of the Planning and Coordination Committee, began to buy three per cent of their May requirements of gasoline from smaller companies who held distress product. It was felt this action would take off the market all distress gasoline although there was a feeling some concerns might endeavor to take advantage of the occasion to increase their crude throughput and manufacture more gasoline if they were assured of a market at a fair price.

Crude oil producers in different sections were increasing their activity in support of the Petroleum Administration's bill, introduced into the Senate and ready for introduction into the House, which would provide a more strict control of crude oil production and imports. While some features of the proposed legislation are not satisfactory to the industry as a whole a large majority of the oil business is convinced Federal control of production is desirable at this time, and that such control, if made effective, would do much towards stabilizing conditions.

There were 104 new locations staked in East Texas during the past week. Operators feel this large number of new operations is a result of the interpretation placed by the Railroad Commission on the new spacing law granting equidistant offset permits. The field recorded an increase in production last week while Texas as a whole remained well above the 1,000,000-barrel per day mark. A completion in the Cayuga Field, in Anderson County, East Texas, the fifth producer there, proved to be best looking well in the new field and was making 24 barrels per hour on a choke.

Oklahoma operators were feeling better as striking employes were returning to work and indications were the labor difficulties would be worked out in a satisfactory manner. Much new activity is forecast in this state as producing companies have been acquiring promising acreage with a view of developing it themselves to build up future reserves deemed necessary.

The Bosco producer in Acadia Parish in the Louisiana Gulf Coast, now making from 750 to 800 barrels daily, has stimulated operations there and nine locations are scheduled to start drilling. Operators feel the productive area might extend over a portion of Acadia, Lafayette and St. Landry Parishes, making the pool quite large. An increase in wildcatting in North Louisiana and South Arkansas is indicated and producers are becoming more active in promising sections of Mississippi.

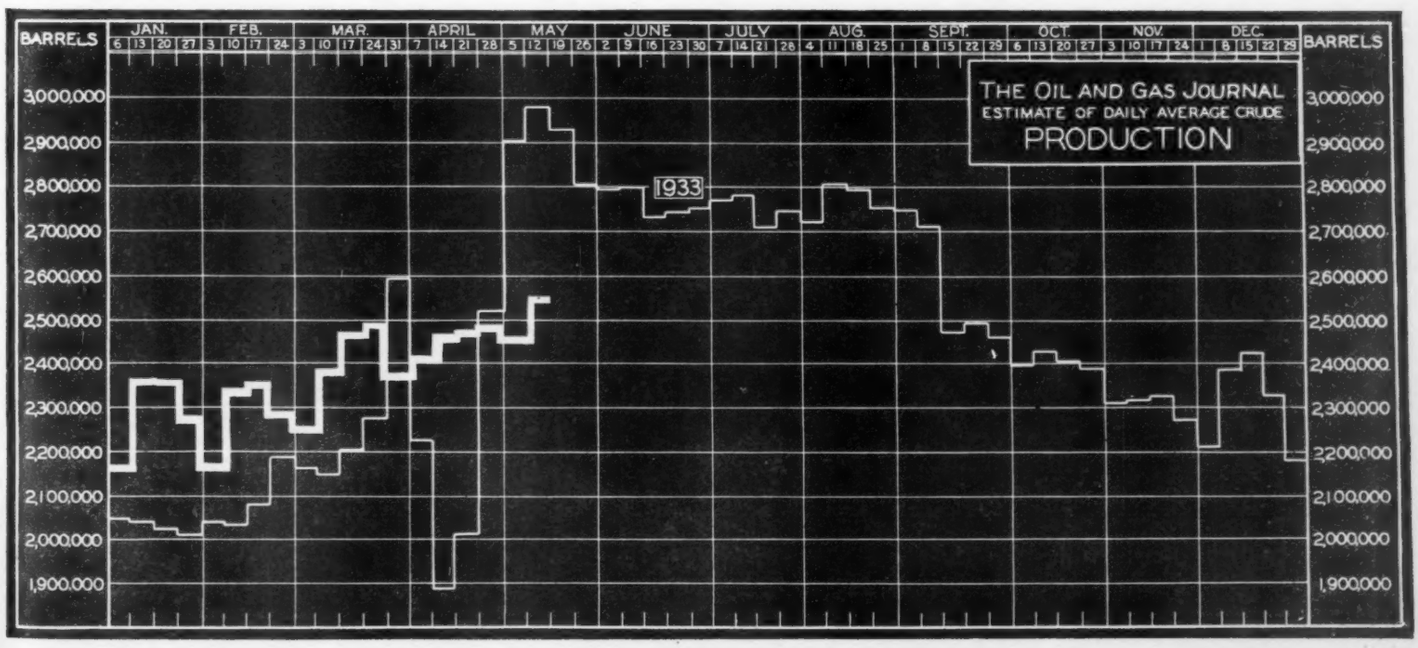
Michigan continues to gain in its operations and production, the output during April showing an increase of about 2,000 barrels daily over the previous month.

## Crude Oil Production in the United States

Estimated daily average production for the week ending May 12, and a comparison with previous week and one year ago, follows:

| | May 12 | May 5 | May 13 1933 |
|---|---|---|---|
| Oklahoma— | | | |
| Oklahoma City | 232,525 | 172,030 | 175,865 |
| Seminole-St. Louis | 84,190 | 72,280 | 93,540 |
| Remainder of State | 229,635 | 237,065 | 194,915 |
| Total Oklahoma | 546,350 | 481,375 | 464,320 |
| East Texas— | | | |
| Lathrop | 216,120 | 214,120 | 435,645 |
| Kilgore | 157,080 | 155,630 | 329,390 |
| Joiner | 140,150 | 138,840 | 308,145 |
| Total East Texas | 513,350 | 508,590 | 1,073,180 |
| West Texas | 137,445 | 137,765 | 157,746 |
| North Central Texas | 90,062 | 88,247 | 70,805 |
| Texas Panhandle | 55,713 | 57,852 | 43,695 |
| East Central Texas | 49,695 | 49,215 | 58,561 |
| Gulf Coast—Texas | 172,357 | 170,457 | 186,312 |
| Southwest Texas | 46,755 | 49,413 | 53,733 |
| Total State of Texas | 1,065,377 | 1,061,539 | 1,644,032 |
| Kansas | 129,678 | 130,845 | 116,210 |
| North Louisiana | 25,540 | 25,535 | 27,435 |
| Gulf Coast—Louisiana | 57,365 | 53,215 | 42,246 |
| Arkansas | 30,660 | 30,535 | 29,945 |
| Eastern Fields (excepting Michigan) | 98,850 | 97,800 | 89,500 |
| Michigan | 29,295 | 30,936 | 17,500 |
| Rocky Mountain area | 87,560 | 86,590 | 74,996 |
| California— | | | |
| Santa Fe Springs | 43,750 | 43,000 | 54,500 |
| Long Beach | 67,250 | 63,000 | 73,750 |
| Playa Del Rey | 10,000 | 9,500 | 11,500 |
| Elwood | 12,250 | 14,600 | 13,250 |
| Kettleman Hills | 59,000 | 54,400 | 62,000 |
| Remainder of State | 301,750 | 284,500 | 263,000 |
| Total California | 494,000 | 469,000 | 478,000 |
| Total United States | 2,564,675 | 2,467,370 | 2,984,184 |

**Increase 97,305 Bbls. Daily.**



# Eighth International Petroleum Exposition Opens in Tulsa With Large and Diversified Displays

By L. G. E. BIGNELL
Petroleum Engineering Editor

The Eighth International Petroleum Exposition and Congress opened in Tulsa on Saturday, May 12, with a record-breaking crowd in attendance and a display of apparatus and equipment of interest to the petroleum industry that has never been exceeded either in quantity or quality. The exposition was officially opened at 2:00 p. m. by W. G. Skelly, president of the exposition. The opening ceremonies started with a parade through the grounds by the Oklahoma A. & M. College band with Boy Scouts and members of the Joe Carson Post of the American Legion assisting. The address of welcome was made by T. A. Penney, Mayor of Tulsa.

Following the address of welcome, N. V. V. Franchot, of Olean, N. Y., and Tulsa, a pioneer in the oil industry, spoke of the advances made in the industry since he first entered it over 50 years ago.

On the platform with the speakers were a number of foreign delegates with their wives and daughters and in their honor the Boy Scouts enacted their "Parade of the Flags" in front of the speakers' stand. A group of young ladies dressed in the costumes of the various oil producing nations and carrying small flags of the countries also marched to the platform as the band played salutes to each flag as it was presented.

### Other Features

There were several other details in connection with the opening ceremonies such as the registration of the "Old-Timers" and the demonstration of the 1912 model airplane furnished by Frank Phillips, Bartlesville, Okla.

In the evening Dr. Eugene A. Stephenson, of the Missouri School of Mines, Rolla, Mo., gave a very interesting paper before the Mid-Continent section of the American Institute of Mining Engineers upon "Basic Data for Oil and Gas Wells."

Sunday was another record-breaking day for attendance and it is reported about 17,500 persons passed the turnstiles on that day.

Monday, May 14, witnessed the start of the meetings of the Petroleum Division of the American Society of Mechanical Engineers, in New Hotel Tulsa, with a large attendance and many interesting papers presented and discussed.

### Exhibits and Displays

The 1934 International Petroleum Exposition is notable for the great number of entirely new and improved articles of equipment used in the industry that are on display. It has been known that there has been a decided effort made during the past three years to improve every class of machinery and each piece of equipment used in every branch of the industry, but it was not until these improved devices were assembled practically under one roof that the results were made evident.

One manufacturer of Diesel engines stated that in his opinion the present exposition is the best show of Diesel engines he has ever attended. These, and the other types of internal combustion engines, are used in every branch of the petroleum industry and practically every large manufacturer has one or more of his machines on display.

Many of these units are in operation direct connected to the modern pipe line pumps or other pieces of auxiliary equipment to demonstrate the efficiency of the combined units. Some engines are used on pumping equipment, others attached to drilling outfits that are capable of operating either as rotary or cable tool unit by the shifting of a set of clutches, and other engines are mounted upon tractors to perform various duties where easily moved power units are needed.

The pipe line construction industry has had many new units developed for its use and this new line of equipment covers every operation in the laying of pipe lines, and in addition offers new devices used for reclaiming pipe that has already been in service.

Welding of pipe lines and all other classes of apparatus has been developed to a very high degree of efficiency. Both the oxyacetylene and electric arc type welding outfits are displayed and straight welding and "stunts" are demonstrated to satisfy the tastes of the crowd. Many units mounted for quick transportation are on display and one such unit equipped for either type of welding also has a lighting plant, and auxiliary shaft to which a pick-up pump can be attached to handle oil or water at any place along the right-of-way as may be necessary.

The production superintendent can find much to interest him in the pumping units on the grounds and in the various booths displaying gearing, waterproof motors, working barrels, balls and seats and numerous other items that are needed to secure the oil from the wells. There are a number of units in operation on the grounds and in one of the derricks is mounted a pneumatic cylinder outfit one of the recent developments in the line of pumping equipment.

### Tubular Goods

The petroleum industry is one of the largest users of all types of tubular goods and pipes of all kinds are on display. Along with this type of equipment is also offered fittings and various kinds of connections so that those interested can secure a very complete and comprehensive idea of the many uses for all kinds of pipe and accessories.

Machine tools for many purposes are on exhibit, as well as all kinds of small tools, including such specialties as non-sparking metal tools to be used around high-pressure gas wells or lines and other dangerous places. Such simple implements as shovels, rakes and hoes are on display because the market for such items in the petroleum industry is of appreciable magnitude.

Various gases and smothering agencies used for fighting fires and the systems employed in their application are on display.

The oil-well shooter is advancing from a happy-go-lucky sort of fellow to a very scientific individual with his equipment keeping pace with his development of technique and on display on the grounds and in the booths will be seen new types of shooters' cars and time bombs that have long been the dream of the men engaged in this profession. Equipment recently used to shoot the 9,986-foot well near Binger, Okla., is on display and such deep holes as this have been beyond the shooting depth until the newer type equipment was invented and developed.

### Refiners and Marketers

The exhibits are by no means limited to the production and transportation of oil for the refiner and the marketer offer a large potential market for all kinds of equipment and devices.

Special steels and fittings for the refinery are on show, and many other special features of interest to the man in the plant or to the owners may be seen.

When the finished products are ready for the market the new method of selling in the original package is being exploited, and numerous kinds of containers and packages are on display. Many are very ingenious and offer unusual opportunities for interesting the prospective customer in a particular brand of product and when his interest is obtained of retaining it by delivering the particular oil in a specific type container.

Pumps and other devices for the service station are on exhibition as well as various lifting devices for moving the automobiles and trucks vertically for inspection and greasing are demonstrated.

Safety lighting systems for every branch of the industry are on display and control devices for electrically operated units of various kinds are in operation in many of the booths.

It is only natural that there should be a large display of automobiles and trucks at the Petroleum Exposition, as well as tractors and caterpillars, all designed in particular detail to meet some specific need of the industry.

The equipment used in the petroleum industry needs painting and protective coatings and the visitor to the oil show will find that much has been done to develop these items to suit the oil country requirements. Paint and protective coatings for equipment above ground and buried are on display, also metal spraying devices that coat the apparatus with a thin sheet of pure metal to retard corrosion or in some other way add to the life of the equipment. Also spray guns for paint and other coatings are on display.

Belting, packing and rubber goods of all kinds are shown in the various booths and the wide variety of items and their many uses gives the visitor an excellent idea of the important part rubber is playing in the petroleum industry. Other types of packing are also available and high pressure and temperature is no bar to securing a suitable type packing for any piece of equipment.

The technical man can find much to interest him in the Scientific and Technical Building where seismographs and other geophysical instruments and methods are displayed. The Universities of Tulsa and Oklahoma have interesting displays, as well as many of the technical societies. Instruments for determining bottom hole pressures and surveying drilled holes are also to be seen in this building. Maps of oil fields and many logs of wells and samples of cores recovered are shown.

# No Gouging in Gasoline Prices Shown by Federal Trade Commission Report

WASHINGTON, D. C., May 12.—The Federal Trade Commission has transmitted to the Senate its report on gasoline prices throughout the country.

The report says that from data available to the commission, supplemented by a limited inquiry as to current prices of gasoline, it appears:

1. Increases in the price of gasoline were made following the approval of the code of fair competition for the petroleum industry on August 19, 1933, and its effective date, September 2, 1933, of approximately 2 cents per gallon, but there were subsequent declines which resulted in an average net increase in prices to the consumer from July 1, 1933, to January 31, 1934, of only about 1 cent per gallon.

2. Computed on the basis of estimated consumption during 1933, consumers were paying at an annual rate of about $160,000,000 more for gasoline on January 31, 1934, than they were on July 1, 1933.

3. The combined rate of state and Federal sales tax on gasoline, ranging from 3 cents per gallon in some states to 8 cents in others, amounts to an average of about 5.14 cents per gallon and costs the consumers of gasoline approximately $700,000,000 per year.

The report says it should be noted in any discussion of prices at this time that "the gasoline market was demoralized during the spring and summer of 1933, and also that, according to the average monthly prices in 50 cities, two in New York and one in each of the other states and the District of Columbia, compiled by the American Petroleum Institute, the average dealer service sttaion price excluding taxes was lower on July 1, 1933, than on July 1 of any other year since 1919."

### Peak Prices During the Period

Following the approval of the code of fair competition for the petroleum industry on August 19, 1933, and its effective date, September 2, 1933, there were increases in prices to the consumer in all the cities ranging from 1½ to 3 cents per gallon either in one, two or three advances between the date of approval of the code and about the middle of September.

A study of the price reports indicates that competition forced prices down from the peak reached about the time of the approval and effective dates of the code in some of the local markets. Competition was reflected in frequent changes in prices in several of the cities covered by this report.

Officials of the American Petroleum Institute have represented that the price structure for gasoline in the spring and summer of 1933 was so low, due to overproduction and consequent low prices of crude oil, as to cause financial losses throughout the entire petroleum industry. These officials insist that a more equitable comparison would be 1934 prices with those of 1926.

The institute has compiled retail gasoline prices as of the first of each month for a number of years in 50 cities . . . showing the service station price excluding taxes, the state and Federal taxes and the total service station price per gallon of regular gasoline which represents the cost to the consumer. The Insti-

(Continued on Page 124)

# Scenes at Opening of Eighth International Petroleum Exposition

1—William G. Skelly, president, International Petroleum Exposition, formally opening the exposition. 2—Foreign delegates: Seated, left to right: Werner Muller and Dr. Frederik Wirth, both with Alfred Wirth Co., Erkelenz, Germany; Senora Lucila Sanz, Madrid, Spain; Senora Oscar Wegner, Buenos Aires, Argentina, S. A.; Senora Luise Plate and Senorita Vera Plate, Buenos Aires, Argentina, S. A. Standing, left to right: M. P. Perez, Spain; Francisco Climent, Madrid, Spain; Daniel Laso, Mexico City, Mexico; Ruperto Sanz, Madrid, Spain; Felipe Laso, Mexico City, Mexico; Oscar P. Wegner, Buenos Aires, Argentina, S. A.; Dr. Enrique V. Plate, Buenos Aires, Argentina, S. A.; Dr. Abel de la Cueva, Ministry National Economy, Mexico City, Mexico and A. Danciger, Tulsa, representing Santo Domingo republic. 3—Delegation from the Union of Socialist Soviet Republics—left to right, N. A. Kryssin, M. G. Silberang, K. P. Lavrovsky, A. S. Schachnasa, N. V. Vannikoff and F. Burnstone. 4—Native costumes and flags. 5—Portion of the crowd at the opening exercises at Exposition Grounds. 6—N. V. V. Franchot, speaker of the day, Olean, N. Y. and Tulsa.

XUM

# Manufacturers of Natural Gasoline Must Adjust Operations to New Economic Conditions

By W. T. ZIEGENHAIN

What at first promised to be a three-day convention of papers and routine discussion for those attending the thirteenth annual convention of the Natural Gasoline Association of America in Tulsa starting May 9 developed into the most interesting and important one the group has held. It was necessary to carry the meeting well into the afternoon on Saturday. This was necessary in order to complete a plan for giving natural gasoline due recognition in the administration's program of allocating motor fuel production and to bring prices up to a profitable level.

In the election of officers for the coming year D. C. Williams of the Continental Oil Co. was again chosen president of the association, with R. C. Wheeler of the General Petroleum Corp., W. E. Reardon of the Columbian Gasoline Corp. and John B. Atkins of the Parade Gasoline Co. vice presidents.

Offering a hearty welcome to those attending, A. V. Bourque, secretary of the Western Petroleum Refiners Association, opened the meeting. This was followed by the address of President Williams, in which he outlined the work of the association for the past year, and in addition offered an exceptionally clear picture of what work the industry had ahead of it in order to raise its position to a point of greater recognition.

He said: "We were faced last June with a completely new set of conditions in this as in other industries, and your association was forced to take on a new and tremendously important task, namely, properly fitting our industry into the petroleum code of fair competition. Realizing that the older and larger branches of the petroleum industry still looked upon the natural gasoline branch as a nuisance and a sort of unwanted child, we knew that we would have to fight every step of the way to escape being ignored if not definitely harmed in this undertaking.

"We are producing about 100,000 bbls. of potential motor fuel each day or approximately 10 per cent of the total motor fuel supply. About 55 per cent of this production originates here in the Mid-Continent. There are nearly 900 natural gasoline plants in the United States, ranging in size from a few gallons per day to 100,000 gallons or more per day. Nearly 200 separate companies and operators own these plants. Of the total natural gasoline production, the so-called integrated companies produce about 65 per cent of the total and the gas utilities and nonintegrated natural gasoline manufacturers produce the other 35 per cent.

"From a market standpoint natural gasoline manufacturers are much like that considerable number of crude oil refiners who have no retail distributing facilities but depend on bulk movement on contract or spot market. From an economic standpoint, however, many of those refiners were injudicious in their choice of a field of endeavor and now demand and usually get a more regular market than does the natural gasoline department of many integrated companies.

"I have frequently heard it said that we should have an Independent Natural Gasoline association whose membership would not be open to integrated companies. I have never discouraged such an idea even though I doubt its necessity. If all the manufacturers who are holdouts from this association could learn a little co-operation in a separate association, I will be the first to endorse it. However, the activities of such an independent association must of necessity be limited, so long as a considerable majority of the volume of production and a still greater majority of the consumptive market is furnished by integrated companies. We must face the facts and the preceding analysis of our industry indicates to me that one general association for the handling of general natural gasoline problems is all that is needed.

"The compiling of natural gasoline statistics has been under debate in the association almost from its inception and every discussion of this subject has furnished new evidence of our need for more detailed and immediate information than is elsewhere available on quality and geographical production and overhanging merchantable stocks of natural gasoline. Many large companies in the past have spent considerable sums of money to currently scout this information from their competitors and they have seemed reluctant to save this expenditure by using the association as a general clearing house where such statistics could be accumulated and disseminated in a completely confidential yet informative manner at less cost to the whole industry than they were individually paying for partial surveys.

At about this point in Mr. Williams' address, S. S. Smith of the Shell Petroleum Corp. and well known in the Mid-Continent natural gasoline fraternity, interrupted the reading. At first a friendly argument seemed certain to follow but the turn of events simply offered an opening for the presentation of a gold wrist watch to Ray Miller, the retiring secretary, by Mr. Smith in behalf of the association and then the introduction of W. F. Lowe, the newly chosen secretary.

One of the features of the convention was the symposium on marketing. Two papers presented, namely those of Howard Felt and Larrie Calkins, were published in The Oil and Gas Journal May 10 and that presented by Neil Buckley is published in this issue.

The discussion which developed after these papers were read took on a technical aspect when D. E. Buchanan asked for an expression from Dr. O. C. Bridgeman of the Bureau of Standards and also from R. C. Alden of the Phillips Petroleum Co. as to what developments from an engineering and an economic standpoint might alter the position natural gasoline now holds as a source of motor fuel. Doctor Bridgeman stated that there had been some progress in the design of automobile fuel systems to permit fuels of higher than average vapor pressure to be used and that there was no need to go much below the 10 to

(Continued on Page 124)

# Greater Recognition of the Natural Gasoline Industry Asked Through Revision of Code

Quick to follow the suggestion of Administrator Ickes that the natural gasoline industry formulate a plan for improving its economic position, those attending the annual meeting of the Natural Gasoline Association of America in Tulsa Wednesday, Thursday and Friday of the past week reassembled in a meeting Saturday to act upon such a plan, formulated in late hours Friday night by a committee of 12.

A formal resolution was drawn only after the committee discussed all points of possible controversy with the large and small manufacturers and with nonmembers of the association as well as its members. The resolution presented to the assembly on Saturday as it was approved follows:

"Whereas, the production of natural gasoline is governed wholly by the production of crude oil and natural gas and,

"Whereas, natural gasoline must be included in any estimate of total available supply of motor fuel, since it all goes into the motor fuel market by some route,

"Be it resolved, that the petroleum code of fair competition be amended as follows:

"Article 3, Section 3, change the second sentence to read, 'In estimating such required production, due account shall be taken of probable withdrawals from storage, and of anticipated imports and also the current production and available stocks of natural gasoline.'

"Article 3, Section 3. Interpretation. The purpose of the second sentence of this section is to effectuate the following: Any provisions in, or interpretation of this code which attempts to balance the total supply of motor fuel with total demand must include the current production and available stocks of gasoline.

"Be it further resolved, that a permanent natural gasoline subcommittee to the P. and C. committee composed of members representative of the natural gasoline industry, be appointed to collaborate with the refinery subcommittee of the P. and C. committee and the natural coordinator in effectuating a more orderly disposal of natural gasoline and to advise with the P. and C. committee and its subcommittee in all matters pertaining to the natural gasoline industry, therefore amend—

"Article 7, Section 4. Second paragraph to include a new subcommittee designated as 'j—Natural gasoline committee.'

"Be it further resolved, that adequate statistics be collected for, and under the direction of, said natural gasoline subcommittee, so that it will be able to intelligently advise with the refinery subcommittee and the national co-ordinator for the purpose of establishing a proper balance between total motor fuel supply and demand."

**D. C. WILLIAMS**
Continental Oil Co.
Re-elected President of Natural Gasoline Association of America

The unprofitable prices at which natural gasoline has been selling in the Mid-Continent has reflected a lack of appreciation on the part of those responsible for the original oil code to place restrictive measures on the production of natural in the same manner as provided for in the case of refinery gasoline. The assumption that the production of natural gasoline would be automatically controlled through the proration of crude production has proved wrong and failure to provide an adequate market for that natural which must be manufactured to avoid waste has not only wrecked the market value of natural gasoline but its effect has extended over into the refinery motor fuel market where the superstabilized grades of natural come into direct competition with refinery material. Repeatedly the natural gasoline industry brought its problems before a few of the members of the P. and C. committee but the committee as a whole has not attempted to correlate the problems of the natural gasoline industry with those of other branches of the oil business and this lack of appreciation of the influence natural bears upon the general motor fuel market prompted the invitation of Administrator Ickes which was read before the convention Friday and which follows:

"Present situation in natural gasoline industry has been brought to my attention frequently during recent weeks and I feel that the industry cannot be expected to continue operating at a loss. May I suggest that present meeting of Natural Gasoline Association of America offers opportunity for consideration of fundamental changes in industry which will result in improvement. If I can be helpful in carrying out any definite suggestions for such improvement, I will be glad to do so. The natural gasoline industry may wish to have committee meet in Washington with administration and Planning and Coordination Committee to endeavor to develop a sound program."

On Tuesday Ray Miller, former secretary of the association and now sales manager for Hanlon-Buchanan, Inc., left with W. F. Lowe, J. B. Atkins, F. E. Rice, S. S. Smith, W. E. Reardon and A. T. Sherer to present the resolution to the P. and C. committee.

# Russell Brown Appointed Compliance Director as Revised Ickes' Bill Made Ready for House

By HUGH D. MALLON
Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., May 14.—As a further step in the enforcement of the petroleum code, the Planning and Coordination Committee has created the position of compliance director and simultaneously announced the appointment of Russell B. Brown as director. Mr. Brown is particularly well qualified for this position as he has been intimately associated with the formation of the code and its administration. It will be the duty of the compliance director to co-operate with the industry and with the oil administrator in the enforcement of the provisions of the code. A list of known violators is being compiled.

Mr. Brown is also executive secretary of the Planning and Coordination Committee and he has stated that this will prevent him from giving full time to his new enforcement duties. He has added, however, that he expects to be relieved from his position as executive secretary in the near future and will then devote his entire attention to the work of compliance director.

Senator Dill, chairman of the Interstate Commerce Committee, stated Saturday that the Federal oil control bill has been referred to the Senate committee on mines and mining of which Senator Logan of Kentucky is chairman. This was done because the pressure of other legislation would have prevented Mr. Dill's committee from holding hearings. Mr. Logan will set a date for hearings within a day or two.

Since the introduction of the bill in the Senate by Senator Thomas, the Petroleum Administrative Board has received numerous recommendations for modification of it. A number of these suggestions have been incorporated in a revised draft which, it is understood, will be introduced in the House this week by Representative Sam Rayburn.

### Revised Bill to House

The House bill, it is understood, will limit the importation of petroleum and its products, including natural asphalt, to such quantities as will prevent imports from interfering with current domestic production by supplying an undue proportion of the domestic consumptive and export demand. Prior to the end of 1935, imports will be limited to the average monthly rate of crude petroleum imported during the last six months of 1932.

The section of the bill providing for quotas in commerce has been changed so that these quotas shall apply only to crude oil and shall be such as will limit the total movements into commerce to the total demand for consumption in the United States and the demand for export. The House bill will probably confine its control entirely to crude petroleum except in the case of imports.

### P.A.B. Members $12,000 Each

The House bill also provides for a membership of only five on the Petroleum Administrative Board. There are now six members on this board and such a provision will require the resignation of one of the members. The new provision follows:

"Sec. 14. There shall be established in the Department of the Interior a board to be known as the 'Petroleum Administrative Board,' which shall be composed of not more than five members to be appointed by the Secretary of the Interior and who shall be qualified by education and experience to discharge their duties. The members for their services shall each receive at the rate of $12,000 per annum, to be paid out of revenues collected from the petroleum industry under Section — of the Revenue Act of 1934. The board shall appoint, with the approval of the Secretary of the Interior, and without regard to the civil service laws or the classification act of 1923, as amended, such qualified attorneys, economists, geologists, statisticians and other employes as may be required to enable the board and the Secretary of the Interior to carry out the purposes of this act. The scientific and professional employes of the board shall be selected solely upon the basis of their scientific or professional qualifications. No person having a direct pecuniary interest in the petroleum industry, or who is in the employ of any person engaged in the petroleum industry, shall be a member or employe of the Board."

### To Buy Excess Gasoline

In compliance with the request of the Planning and Coordination Committee that certain refining companies purchase 3 per cent of their needed gasoline during the month of May from other refineries which have a surplus, several of the companies addressed have signified their intention of going into the market and making such purchases. This, it is believed by members of the committee, will bolster the gasoline market to a certain extent.

### June Gasoline Quota

National gasoline production in June to meet consumption demand was set at 34,600,000 bbls. by order of Administrator Ickes. An order redividing the country into refinery districts was also issued at the same time. This was a formality necessary to carry out the refinery plan. The order dividing the country into refinery districts is somewhat changed from previous orders in that the state of Texas is made one district, No. 5, with two subdistricts, the Gulf Coast and the rest of the state. It is believed that refinery control will be made more effective by segregating the large number of refineries in that state in one district.

It has been estimated that under the June quota of 34,600,000 bbls. over 3,000,000 bbls. of gasoline will be withdrawn from storage. Last year the consumption during June amounted to approximately 38,000,000 bbls., and it is anticipated that this year's consumption will exceed that of 1932 by 10 per cent. If this happens more than the estimated 3,000,000 bbls. will be withdrawn from stocks. District allocations released by the P. and C. committee follow: District 1, 5,720,000 barrels; District 2, 1,550,000; District 3, 5,365,000; District 4, 4,765,000; District 5 (A), 2,410,000, (B) 6,300,000; District 6, (A) 1,300,000, (B), 840,000; District 7, 700,000; District 8, 5,650,000.

### Government Contracts

An order of the administrator relating to government bids has been made public clarifying his previous order on that subject and changing certain provisions. Under the new ruling contracts with the United States or any agency thereof, or any state or political subdivision, may carry a top price of not less than 25 per cent above the posted price on the day the bid is opened. The 25 per cent shall be computed on the posted price before discount has been taken.

The order also allows a top price contract to be entered into for petroleum products other than gasoline and other

RUSSELL B. BROWN

motor fuel for a period of one year. Contracts for motor fuel are limited to three months.

The text of the order follows:

"Whereas, under date of March 29 an exception was granted by me to the provisions of Rule 3 of Article 5 of the said code in order to resolve a conflict between the laws of the Federal Government and of the several states with the provisions of this rule and otherwise to serve the public interests; and it appearing desirable that certain modifications be made in the order granting this exception to clarify the same and to prevent the abuse thereof,

"Now, therefore, the same hereby is modified to read as follows:

"Any person (as such term is defined in the code of fair competition for the petroleum industry) selling petroleum or the products thereof to the United States, or any agency thereof, or to any state or territory or political subdivision or agency thereof, or to the District of Columbia, or to any municipality, must comply with the provisions of Rule 3 of Article 5 of the code of fair competition for the petroleum industry except that a top price may be bid. In no event shall the top price be lower than 25 per cent more than the posted price on the date the bid is opened, less only Federal and/or state taxes. The 25 per cent shall be computed on the posted price for the smallest quantity of the particular petroleum product to be delivered. No contract for gasoline or other motor fuel containing a top price provision shall be made for a period exceeding three months. No contract containing a top price provision for any other petroleum product shall be made for a period exceeding 12 months. Deliveries under any contract authorized hereunder shall commence not later than 60 days after the date the bid is opened. A top price may be bid as hereinbefore provided for service station deliveries but other than that nothing herein contained shall be construed to allow quantity discounts from the posted price at filling stations."

### Subcommittee Changes

Announcement has been made by the Planning and Coordination Committee of the appointment of A. E. Watts, Consolidated Oil Co., New York City, as chairman of the transportation subcommittee. Mr. Watts succeeds E. B. Reeser, who has resigned as chairman of the subcommittee.

At the same time it was announced that H. H. Anderson, of the Shell Petroleum Corp. had been appointed chairman of the labor subcommittee. I. A. O'Shaughnessy, who previously had been appointed, announced he would not be able to serve in that position. Two members were also added to the labor subcommittee, George Olds, Jr., of the Continental Oil Co. and Thomas Taylor of the Standard Oil Co. of Louisiana.

Gen. Hugh S. Johnson, national recovcovery administrator, signed an order Friday suspending a provision of the trucking code requiring the registration of not-for-hire trucks and the payment of an assessment of 90 cents per vehicle.

### Pipe Line Code Hearing

A public hearing was held May 9 on a code of fair competition for the pipe line construction industry. This proposed code was presented by S. M. Williams, Jr., and G. E. Matt representing the Associated Pipe Line Contractors of America.

Early in the hearing it was apparent that the Associated General Contractors of America would object to the pipe line construction industry having a separate code. Their contention was that this section of the industry should come under the provisions of the construction code, which it was alleged included numerous contractors doing pipe line construction work. The proponents of the pipe line construction code objected to this inclusion in the other code. They said the general construction code was formulated without their knowledge and that, if an attempt had been made to include pipe line construction in that code there had been no representation of the pipe line industry present when it was written.

E. H. Eddleman representing the Planning and Coordination Committee appeared with the request that minimum wages and maximum hours for the pipe line construction industry be the same as those set up under the petroleum code.

The hearing was adjourned after hearing these arguments until June 1, 1934, when hearings will be resumed at Room 612 Albee Building, Washington.

### Pool Development Approved

Approval of plans for developing 194 new oil pools, with an estimated probable producing area of upward of 81,000 acres in 10 states was announced by Administrator Ickes. The plans were recommended by the Petroleum Administrative Board after hearings and investigations by the production division of the board and the technical experts of the Geological Survey.

Fifty-nine of the 194 plans covered 19,740 acres in Texas. The other plans were divided by states as follows: California, 6; Colorado, 2; Kansas, 42; Louisiana, 8; Michigan, 1; Montana, 1; New Mexico, 7; Oklahoma, 57, and Wyoming, 11.

XUM

# Drilling Play Now in Progress at Goose Creek May Prove Up Deeper Sand Production

By NEIL WILLIAMS
Gulf Coast Bureau, The Oil and Gas Journal

HOUSTON, Tex., May 14.—The never-ending possibilities of new production in and around the old Gulf Coast salt dome fields and the ability of these oil fields to stage repeated comebacks again are being demonstrated at Goose Creek where an active drilling play is under way to prove up lower horizons. Virtually inactive since the early twenties except for scattered tests and reworking of old wells, this field, since the discovery of deep sand production, has become one of the busiest spots on the coast.

Goose Creek, typical of the old boom fields of the coast, and a name once famed around the country, apparently had passed into oblivion. In its heyday along from 1916 through 1918, as many as 700 rigs were running at times and daily production went above 100,000 bbls., but following the peak in 1918 development played out rapidly. A revival of interest was felt during 1917-1930 when Humble Oil & Refining Co. drilled a half dozen deep tests in succession off the east and northeast sides of the field and got oil and gas showings in deep sands, and one well which blew out and flowed for a short time. But, with general conditions as they were, there was little incentive for additional new exploration and the cloud of idleness again settled over the field. Daily production dropped to only a few thousand barrels.

Late in December of last year, Gulf Production Co went back into one of its old shallow wells, its No. 17 Tabbs Fee, deepened it, and found in a 4,500-foot horizon an oil sand previously untouched so far as known. On Christmas day, at a total depth of 4,502 feet, the well was brought in flowing 500 bbls. of pipe line oil daily pinched in on chokes.

Location of the well was on the extreme northeast side of the field, where within the producing limits no wells had ever been completed below 2,600 feet. At one time this particular area had been thick with wells in the numerous sand lenses which exist from around 800 feet down to the 2,600-foot horizon. Long since, the majority of those wells had played out and had been abandoned. Some old shallow pumpers, however, remained to mark the spot.

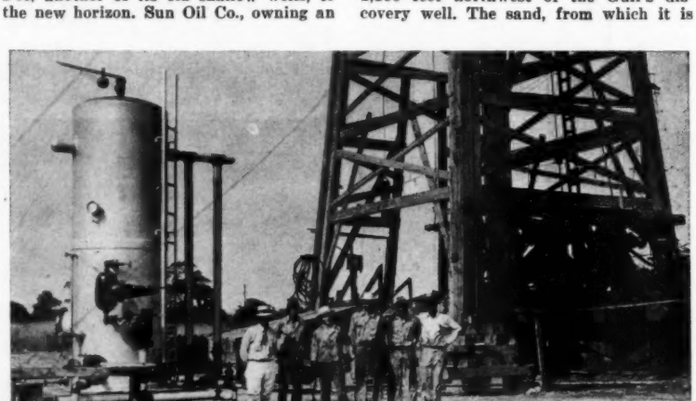
### Oligocene Well

Geologically speaking, the older shallow wells have been producing from Miocene sands. The new Gulf well was completed in the underlying Oligocene, probably in the Heterostegina. In other parts of the field, particularly out in Tabbs Bay and some distance from this well, production has been obtained from an Oligocene sand around 4,200 feet in a few wells but except for that there was no other Oligocene oil in the field. In view of the peculiar lensing deposition of the sands at Goose Creek it is unlikely that there is any relationship between the sand in the Gulf well and the 4,200-foot sand in the bay. In fact, the two oils are of different gravities, the new production being approximately 32 gravity while that in the 4,200-foot sand is 29 gravity.

Like a smouldering volcano, the field was ready to burst into life at the new discovery. After a little delay while waiting to watch how the first well held up, Gulf started deepening No. 13 Tabbs Fee, another of its old shallow wells, to the new horizon. Sun Oil Co., owning an adjoining lease, started an offset, No. 9 Wright. Most of this part of the field is in small tracts ranging from one to 15 acres. While none of these immediately around the Gulf and Sun leases was available, a short distance to the north and to the west nearer the edge of the old shallow field, a number of independent companies and operators obtained leases on tracts which either had been abandoned previously or which were "farmed" out to them, and prepared to drill them.

The next development came when Miramer Oil Corp., on a 7½-acre lease formerly owned by the Humble Oil & Refining Co., while drilling to the 4,500-foot sand found by the Gulf, encountered a 4,000-foot sand and at a total depth of 4,016 feet brought in an 800-bbl. producer, No. 1 Hughes, completed April 6. This well, in the southeast corner of the tract, now is being offset to the south by Humble Oil & Refining Co. on its Sweet lease, and on the east by Edwards Drilling Co. on its 2½-acre Matthews tract.

The Miramar well is approximately 1,100 feet northwest of the Gulf's discovery well. The sand, from which it is producing, is entirely different, being in what is believed the top of the marine Oligocene, and the oil is 27.9 A. P. I. gravity in contrast with the 32 gravity oil in the Gulf well.

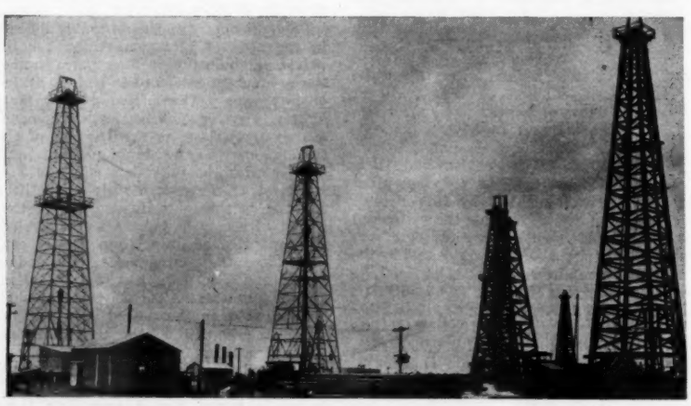


*Miramar Oil Corp.'s No. 2 Hughes, deep sand well being drilled at Goose Creek. In the foreground, left to right, are: G. W. Johnson, superintendent, and the crew, C. A. Collins, E. Burrow, J. E. Matherly, Claud Collins and George Lowery*

### More Consistent Producer

So far this well has proved a much better and more consistent producer than the Gulf well, which has been the best well of the 4,500-foot sand, and it looks as though the 4,000-foot sand may prove the better of the two horizons. The Miramar producer on a three-eighths-inch choke has been holding a steady flow with pressure around 200 pounds and has shown no trace of water.

The 4,500-foot sand has proved a little disappointing. All the wells are making some water. Gulf's second well, completed March 8, had a short flowing life and now is on the pump. Sun Oil Co.'s offset, No. 9 Wright, completed March 18, is a small producer. Gulf's third well, No. 13 State Land Producers, flowed salt water when brought in at 4,545 feet. It since has been plugged back to 4,537 feet and is working over and may make an oil producer. Adrian Moore's No. 1-A Wright, an east offset to the Sun well, evidently missed the pay and at latest report was drilling below 5,225 feet. Humble Oil & Refining Co. also got a dry hole in its No. 79 Simms-Smith, which went to a total depth of 4,642 feet.



*View of a portion of the deep drilling activity at Goose Creek. At extreme left is an electric drilling rig of Humble Oil & Refining Co. on No. 27 Sweet, south offset to Miramar Oil Corp.'s No. 1 Hughes, 4,000-foot discovery well. At extreme right is L. H. Puckett's No. 1 Berry (Scott), being swabbed. Note the old shallow pumping well and contrast in size of derricks on the old and the new wells, only just a step apart*

Two other wells have been completed in this play, both being in the 4,000-foot sand. These are Gulf Production Co.'s No. 23-A Wright, brought in the past week at a total depth of 4,014 feet flowing 209 bbls., 36 per cent water, and L. H. Puckett's No. 1 Scott (Berry), which flowed for a short time from a total depth of 4,026 feet. The latter, at latest report, had been worked over and was being brought back in. Gulf's 4,000-foot well is the most northeasterly of the producers.

The Puckett well is on a 2½-acre tract adjoining to the east the Edwards Drilling Co.'s Matthews tract. Location has been made by Humble Oil & Refining Co. for a south offset, No. 28 Sweet. Jay Simmons, with a 2½-acre tract to the east of the Puckett well, also has made location for an offset. Due to the smallness of the tracts, drilling of the Simmons well has to wait completion of the well it is to offset. The boilers and other equipment of the Puckett well had to be set up on Simmons' tract. A well on the Simmons tract will require an east offset by Gulf Production Co., which in turn will have to be offset by Humble Oil & Refining Co.

### Ten Rigs Running

Ten rigs now are running in development of the deep sands at Goose Creek, and locations have been made and derricks are up for three or four additional tests. Efforts now are being made by Jay Simmons to extend the deep pay a substantial distance to the northwest by a test now drilling on the Kerwin Mitchell lease. Of particular interest in the new deep tests to be drilled is Humble Oil & Refining Co.'s No. 80 Simms-Smith. This is east of the field and about a half mile or more southeast of the present deep development. This test is expected to go to depths not yet reached by any previous drilling, and a 165-foot steel derrick is being moved in for this purpose. The location is in water and piling now is being driven for foundations.

Although production of Goose Creek is typically that of a salt dome, and other indications are that of a salt dome, no salt or domal formation has ever been found. The field is of the non-piercement type of dome or structure, and one, along with Orange and Welsh, in which it is believed that salt, if it exists, is at exceptionally great depths. Characteristic of the producing horizons, as previously mentioned, is the extremely lenticular nature of the sands. Practically all the sands are in thin lenses with no consistent producing sand extending over any great portion of the field. These lenses may be encountered at any depth from 800 feet on down. Some carry all water, some all oil and some both oil and water.

A phenomenon of the field has been the subsidence of the land along Tabbs Bay (a portion of Galveston Bay) in which there has been a sinking of as much as 4 feet, permitting the bay to

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# Names, Faces and Scenes of Historical Interest to Be Preserved in Gallery of Petroleum

By T. F. SMILEY

Men whose names are linked with the variegated chronicles of oil—its achievements, its defeats, its adventures—look from beautiful paneled walls of the mezzanine in the National Bank of Tulsa, where the most interesting collection of petroleum pictures in existence is growing rapidly. Some of these men have passed on. Others are in the thick of the industry's activities today. All have enriched the history of oil.

Here too are scenes that vividly bring back pioneer days—towns, fields and individual wells that were centers of keen interest in their time.

The project is in the hands of Walter Ferguson, vice president of the National Bank of Tulsa and former newspaperman, intimately acquainted with the story of oil and with the development of the Southwest. The very fact that the undertaking was conceived by him and is under his personal supervision is a guarantee of the thoroughness and the zestful interest with which it will be carried out. His passion for hunting down pictures, books and other relics of historic value has made his name known in many parts of the country. His collection of Oklahoma memorabilia in his private residence in Tulsa is of such noteworthy character that the Smithsonian Institution in Washington sent a representative to catalog it.

It is recalled that Tom Galey, former active oil and gas operator in Mid-Continent fields, long a resident of Independence, Kans., and himself an incurable collector of souvenirs, was deploring the lack of a really comprehensive oil museum two years ago, shortly before he left for Owensboro, Ky., now his home. "It's a shame," said Mr. Galey, "that nobody is gathering in a systematic way the historical material relating to the petroleum industry. There's a wealth of it scattered throughout the world, but without an orderly, intelligently directed plan for getting it assembled, much of it will be lost. Many a valuable relic already has fallen into the hands of somebody who does not realize its significance. As the years go by there is increasing danger that it will become a victim of housecleaning fervor and go the way of attic rubbish."

This gallery of petroleum in the bank building, begun several months ago, has already attained such proportions that the walls of several rooms are well covered. Additions are arriving almost daily. On finding out about the enterprise folk are sending in rare pictures, welcoming the opportunity of disposing of them in this way. Mr. Ferguson expects eventually to have all six rooms of the mezzanine lined with pictures. And then—

"I have an idea that this thing will become so big that an entire floor will be devoted to what I foresee as a museum of petroleum," said Mr. Ferguson as he straightened a burning tank in the early days of the Glen Pool. "I shan't stop at pictures. I'm already making a start on a library which I hope eventually will be a complete history of every phase of the oil industry. Then there is no end of relics that might be assembled."

### And Why Shouldn't He Smile?

Among pictures likely to be among the first to catch the eye of the visitor is one showing 17 persons grouped beside an oil well of yesterday's model. All look pretty well satisfied about something, and one of them, a youngish looking and somewhat rotund man in an outfit that somehow suggests a country storekeeper, is wearing a broad smile. Well, why shouldn't he? That man is Ernie Marland (they all called him Ernie in those days), and the well is the discovery well in the Ponca City Field, on the Willie Cries for Ribs lease. It marked the climax of nine failure-studded years, for the No. 1 Willie Cries for Ribs, with an initial production of 120 bbls. at a depth of 1,500 feet, was destined to be the forerunner of the great Marland interests, later merged with the Continental Oil Co.

### Other History-Making Wells

It is Mr. Ferguson's intention ultimately to make each picture of a discovery well the central one of a group relating to that pool. Another such picture is that of the No. 1 Norman, on the eastern edge of Neodesha, Kans., the first commercial oil well in the Mid-Continent territory, completed November 28, 1892, in a garden patch owned by T. J. Norman, Neodesha blacksmith. The site of the well is a barnyard now, but plans are underway for its preservation and for a marker. W. M. Mills, who had been wrecked financially in the oil exchange crash in Bradford, Pa., on Black Friday, May 16, 1884, owned the well, and he sold his interest soon afterward to Guffey & Galey, of Pittsburgh, Pa. It was drilled by Cam Bloom, well-known contract driller, who still resides in Independence, Kans.

To Cam Bloom fell the distinction of drilling another famous discovery well, and Mr. Ferguson has a picture of that one in the collection too. It is the oldest producing well in Kansas, and was brought in April 15, 1897, on the west bank of the Big Caney River in Bartlesville. Mr. Bloom, working for the Cudahy Oil Co., had to transport the drilling rig 65 miles across country over rough, deep-mudded wagon trails from Red Fork, then a trading post. It took three profanity-strewn weeks. Today it would take about three hours. There were 26 wagons in the train, powered by horses, mules or oxen. What gripes Cam when he looks back now is the fact that there was oil right under the whole blooming 65 miles of ooze through which the wagons slipped and sloshed and sank to the hubs. Later tests revealed that a well put down almost anywhere would have been a producer. In Mr. Ferguson's photograph of the well, taken in 1920, H. V. Foster, president of the Indian Territory Illuminating Oil Co., and H. R. Straight, vice president of the Empire Oil & Refining Co., are seen standing beside it.

Of course, there are pictures of Col. E. L. Drake and his Titusville, Pa., well, which in 1859 started the oil industry on its spectacular career.

### Useless to Try to Look Dignified

And here are Harry F. Sinclair and John F. Overfield sitting with rigid perpendicularity in a funny little electric coupe. The picture was taken in 1905, too early for them to know that a man can't look dignified in one of those early models.

More than 100 men engaged in some branch of the oil business only 10 years after the Drake discovery are shown grouped in front of the Dalzell Building in Pittsburgh, Pa. Beneath the picture, taken in 1869, is given the name of each man in it, under the heading, "The Oil Trade of Pittsburgh." It comprises a virtually complete roster of that city's oil men, many of whom were of course speculators in the oil exchange which had been established there. Office signs on the building show that it was occupied by various oil firms, including that of Waring & King. Many of the names appearing with the picture are those of families well known in the business and social life of western Pennsylvania today.

Another picture much like it, taken in 1871, shows 60 or so oil men gathered in front of business buildings in Millerstown, Butler County, Pennsylvania. Window signs bear the names of early oil firms.

A group photograph of the Prairie Oil & Gas Co.'s force in Tulsa in 1912 presents W. R. Luckfield, Harry Gibney, George Coyle, Ed Latimer, R. S. Gray, T. R. Lott, G. E. Casey and J. C. Bennett.

Here's a group bristling with reminiscences. The names written below it fol-

(Continued on Page 123)

*A corner of the National Bank of Tulsa's reception room, showing a few of the pictures in the gallery of petroleum. Standing in the doorway are A. E. Bradshaw, president of the bank (left), and Walter Ferguson, vice president, who is supervising the collection of oil memorabilia*

XUM

# Potential Value of Motor Fuel as Determined by Octane Number and Total Volatility

By G. G. BROWN and CLAIR A. MARSHALL
University of Michigan*

Octane number is an indication of the potential value of a fuel, rather than of its actual value, unless the engine in which it is to be used were so designed that the fuel were always used at its highest useful compression ratio or at the point of incipient knock. Modern engines are not so designed. Many engines never attain the point of incipient knock with motor fuel of standard grade and even high compression engines actually make full use of the nonknocking (high octane) character of fuel only under severe conditions as when carrying heavy loads at low speeds which exist for relatively brief time intervals. For these reasons octane number is properly classed as an indication of the potential value of motor fuel.

Somewhat the same condition exists in regard to volatility, in that few if any

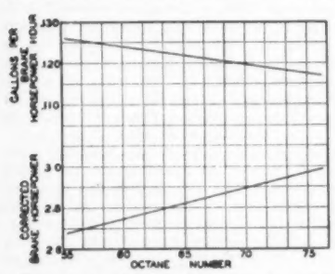



*Figure 1—Brake horsepower, and fuel consumption (gals. per brake horsepower hour) as a function of octane number increased by blending lead tetraethyl to a straightrun gasoline when each fuel is run at compression ratio for incipient knock under conditions for determining A.S.T.M. octane number*

modern engines make full use of the total volatility of standard grade fuel, and certainly no motor cars made full use of the highly volatile natural gasoline sold as regular grade motor fuel by one leading company early this year.

But all motor cars make use of starting volatility as indicated by the lower end of the A.S.T.M. distillation, and all motor cars make use of the warming-up volatility evident in low 50 per cent points, since all motors must be started and warmed up. Therefore, lower end or "partial" volatility of motor fuel is always effective in controlling starting and warming up, or acceleration, on all cars and represents not simply potential value but actual service value in all cases.

*Presented before Tulsa meeting Natural Gasoline Association, May 9-11.

**TABLE 1—MOTOR FUEL PROPERTIES**

| Fuel* | 1 | 2 | 3 | 2T | 3T |
|---|---|---|---|---|---|
| Character | Straightrun | Cracked | Cracked | 1.29 cc. TEL per gallon of Fuel 1 | 2.20 cc TEL per gallon of Fuel 1 |
| Octane No. | 54 | 65 | 69 | 66 | 69 |
| Gravity, ° A.P.I. (60° F.) | 60.9 | 61.9 | 52.0 | 60.7 | 60.7 |
| Comp. ratio for incipient knock | 4.35 | 4.44 | 4.53 | 4.44 | 4.50 |
| A.S.T.M. distillation: | ° F. | ° F. | ° F. | ° F. | ° F. |
| I.B.P. | 106 | 97 | 96 | 106 | 106 |
| 5% | 143 | 130 | 136 | 144 | 150 |
| 10% | 162 | 146 | 157 | 162 | 167 |
| 20% | 190 | 173 | 191 | 190 | 192 |
| 30% | 212 | 200 | 222 | 212 | 212 |
| 40% | 230 | 224 | 253 | 231 | 232 |
| 50% | 248 | 246 | 280 | 248 | 250 |
| 60% | 267 | 261 | 309 | 269 | 270 |
| 70% | 290 | 286 | 331 | 291 | 291 |
| 80% | 315 | 306 | 353 | 315 | 315 |
| 90% | 344 | 337 | 374 | 345 | 344 |
| 95% | 368 | 362 | 388 | 372 | 369 |
| E.P. | 396 | 371 | 400 | 392 | 391 |
| Recovery | 98.5 | 97.0 | 98.0 | 98.0 | 98.0 |

Barometer: 29.12 inches Hg.

*Fuels 1, 2, 3, 2T and 3T obtained from same source.

Upper end or "total" volatility, as represented by low 90 per cent points, indicates the ability of the fuel to deliver a substantially dry mixture at low manifold or mixture temperatures. The use of low mixture temperatures is of great importance in increasing the power output of motors. But no advantage is obtained by the use of fuels of low 90 per cent points unless the mixture temperature is decreased, just as there is no advantage in the use of fuels of high octane number unless the compression ratio is increased. It is the increased compression ratio, and decreased mixture temperature, which increase the power and efficiency and not the octane number and total volatility.

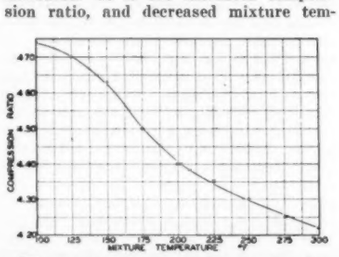



*Figure 2—Compression ratio for incipient knock when same fuel is used at different mixture temperatures*

### Effect of Engine Design

For these reasons octane number and total volatility indicate the potential value of the fuel, which is not realized unless the engine is designed and constructed to operate at the point of incipient knock and at, or below, the dew point of the fuel.

All tests were made on a C.F.R. test engine direct connected to an electric dynamometer for determining power output. In preparing for a test the engine was thoroughly checked and allowed to run at 900 r.p.m. for from one and one-half hours to two hours in order to obtain steady operating conditions. The tests were made with oil in the crankcase at 130° to 140° F., and spark advance and jacket cooling maintained as in A.S.T.M. octane-rating procedure.

Each test run was of from three to four minutes' duration, with from 7 to 10 minutes between runs. These periods were found adequate to allow the engine conditions to become constant.

### Results of Test Runs

Corrected brake horsepower values were obtained by correcting to 60° F. and 22.92 inches of mercury by the following formula:[1]

$$Hp_c = Hp_o \times P_s/P_o \sqrt{T_o/T_s}$$

where:

P refers to pressure.
T refers to temperatures on the Rankine scale.
subscripts c, o and s refer, respectively, to "corrected," "observed" and "standard" conditions.

For purposes of computing the fuel economy the observed brake horsepower values were employed with fuels at 80° F.

Figure 1 shows the brake horsepower (power output) and the fuel consumption in gallons per brake horsepower hour, plotted as a function of octane number when the compression ratio for incipient knock is used for each fuel[2] and test conditions are as specified for A.S.T.M. octane number determination. An increase in octane number from 55 to 76 increases the potential power output from 2.68 to 2.98 brake horsepower, or 11.2 per cent, and decreases the fuel consumption from 0.126 to 0.117 gallons per brake horsepower hour, or 7.1 per cent.

Using the same C.F.R. variable compression engine and the fuels of Table 1, a series of tests were run to determine the effect of mixture temperature on power output and fuel consumption. Mixture temperature has a double effect. A decrease in mixture temperature not only increases the power output but also makes possible the use of higher compression ratios without knocking.

Figure 2 shows how the compression

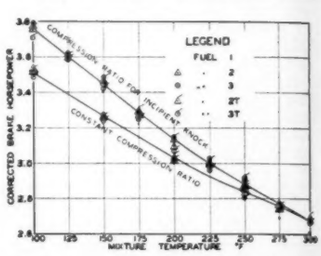



*Figure 3—Corrected brake horsepower output with various fuels all of which were used at different mixture temperatures, at constant compression ratio of 4.22, and at compression ratio for incipient knock with Fuel 1*

ratio for incipient knock is increased as the mixture temperature is decreased from 300° F. to 100° F. when using the same fuel (1 of Table 1).

The results obtained using the fuels of Table 1 are given in Table 2 and are plotted in Figures 3, 4 and 5.

The lower curve in Figure 3 indicates the brake horsepower as a function of mixture temperature at constant compression ratio, and shows the benefit obtained by simply decreasing the temper-

(Continued on Page 46)

[1]S.A.E. Handbook, 1933, p. 595.

[2]Brown and Singer, "More Than High Octane Value Required to Make Economical Motor Fuel," The Oil and Gas Journal, Vol. 32, No. 39, pp. 14-15, Feb. 15, 1934.

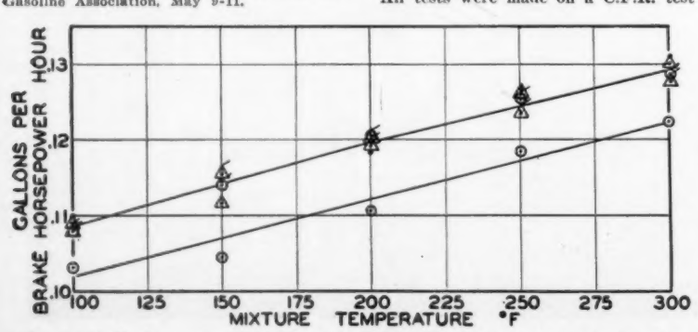



*Figure 4—Fuel consumption in gallons (at 80°F.) for various fuels when mixture temperature is varied at constant compression ratio of 4.22*

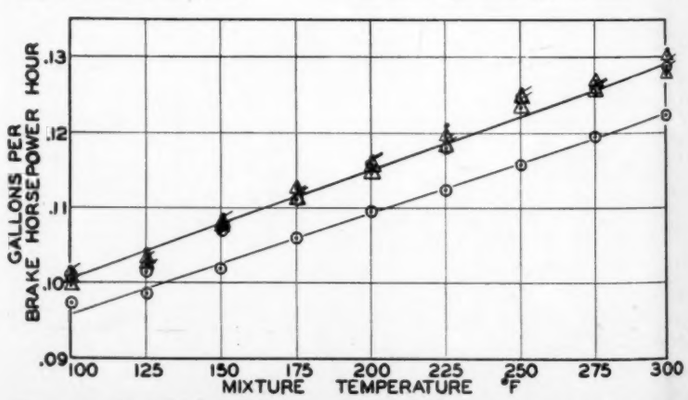
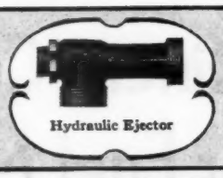
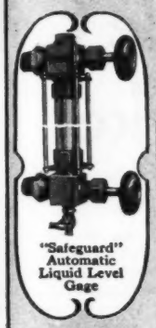



*Figure 5—Fuel consumption in gallons per brake horsepower hour for various fuels at different mixture temperatures when tested at compression ratio for incipient knock for fuel 1 as indicated in Figure 2*


Hydraulic Ejector

PENBERTHY PRODUCTS

Steam Ejector


"Safeguard" Automatic Liquid Level Gage

Automatic Injector

# ★ NAVY TYPE ★

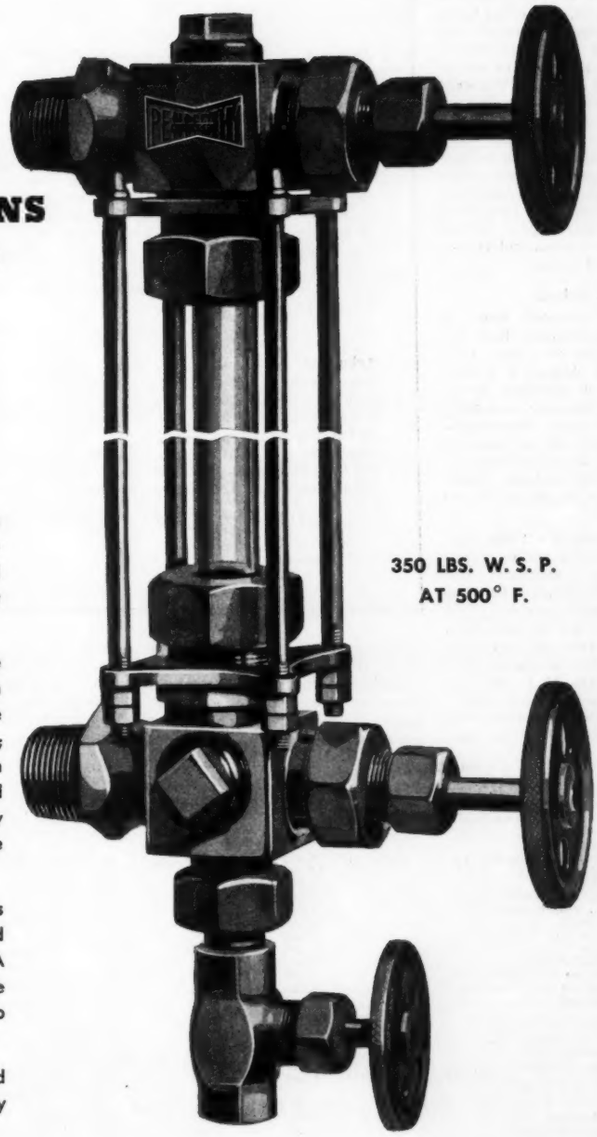
## EXTRA HEAVY WATER GAGE

"Navy Type" Liquid Level Gage

Gas Engine Lubricator

**CONFORMS WITH NAVY SPECIFICATIONS AND A. S. M. E. BOILER CODE**

PENBERTHY PRODUCTS



**350 LBS. W. S. P. AT 500° F.**

"All-Iron" Automatic Liquid Level Gage

Snap Lever Oiler

HERE is a water and liquid level gage that has no superior in design, materials and workmanship. It is used where only the best is good enough—and it has frequently proved the least expensive in the long run.

Ball type safety valves are located in each gage arm to automatically and positively close when the glass is broken. Ball in lower valve must be lifted to seat and cannot close unless glass breaks; this absolutely prevents a false water level from being shown. The shut-off valves are arranged for easy regrinding. Packing glands prevent any torsional stress on glass when packing nuts are drawn down.

The gage arms are self-cleaning. The glass is offset from stems for cleaning from either end without loosening glass packing or valves. A separate drain valve, union nut and tail are furnished; valve can be connected directly to gage or placed wherever most convenient.

The "Navy Type", like other Penberthy water and liquid level gages, is carried in stock by supply houses everywhere.

Automatic Cellar Drainer (Water or Steam Operated)

Automatic Electric Sump Pump

## PENBERTHY INJECTOR COMPANY

DETROIT, MICHIGAN • *Manufacturers of Quality Products Since 1886* • WINDSOR, ONTARIO

Spring Compression Grease Cup

Plain Compression Grease Cup

Screw Plunger Grease Cup

# Curtailment of Mid-Continent Refinery Crude Oil Runs Should Strengthen Motor Fuel Market

By W. T. ZIEGENHAIN

One year ago Mid-Continent refiners were making substantial additions to their daily crude runs in anticipation of higher gasoline prices and better gallonage sales over the summer and early fall months. They based their hopes for higher prices upon the ultimate acceptance and enforcement of the petroleum code which, at that time, was being formulated. Their assumption proved correct, and the gasoline price rose from 2 cents at this time a year ago to nearly 4 cents by the close of June. It then went to 5 cents in the middle of September.

All of this was the direct result of advancing and pegging crude prices. Then there came a weakening of the market over the fall and winter months but the year was finished with motor gasoline at the 4-cent level. Over the first four months of this year motor gasoline has played between 3 and 4 cents and is now strong slightly above 4 cents.

### Code Has Helped

These facts are reviewed now to briefly show the improvement that has come about over the past year due to the code and which came despite a greatly stimulated program of gasoline manufacture. Now we see the code in a more perfect form, a better gasoline consumption ahead and a program of gasoline manufacture that calls for curtailing production. The conclusion to draw is that refinery prices stand a favorable chance of advancing.

Referring to the basis for these conclusions, the acompanying table shows that the Mid-Continent refineries will process an average of 457,425 bbls. of crude during May of this year compared with 470,460 bbls. daily a year ago. Also, whereas crude runs a year ago were given a boost of about 30,000 barrels in May over April, this year the May runs are about the same as those of April, 1934.

It must not be denied, however, that average refinery operations so far this year have been greater than over the same five months last year but when considering the trend at the moment, there certainly is no evidence of the rather free manner with which crude runs were increased a year ago. Looking at the comparison again, it will be seen that schedules have actually decreased over the past three months.

The only factor which might disturb this control and balance of supply and demand is the threat of "a production holiday" in several large plants. This strike threat is centered in the Chicago area and the seriousness of the threat is not known. Strikes have been so foreign to the refining business that it is difficult to weigh the significance of the threat. It is known, however, that if every effort to avert the strike proves fruitless and a tie-up of plant operations is effected, Mid-Continent refiners will be called upon for additional supplies for the Chicago area and the present Mid-Continent schedules could be readily increased to meet the new demand. Each plant in the Chicago area where a "production holiday" is pending is simply one of several or many plants operated by respective companies. A strike in Chicago would simply mean shifting the operations to other units for the duration of the trouble. So far, there is scant evidence that Mid-Continent refiners anticipate a call for additional supplies nor is it generally believed an equitable settlement of the Chicago threat will be difficult. However, this new factor has been injected into the operating routine of Mid-Continent refiners and since the signing of an operating agreement two weeks ago by the Champlin Refining Co., at Enid, this group has given much thought to the subject.

### East Texas Runs

The most noticeable change in the refining operations by areas is the decline in the East Texas operations. Many plants have been shut down and the list generally has effected substantial reductions. The addition of plants, however, continues and there has been no let-up in company reorganizations, name changes and company mergers. Reviewing the name changes for the month the list now includes the name of the Archer Refining Co. which has taken over the 1,000 bbl. plant in Gladwater last owned by Duck-

(Continued on Page 153)

## Mid-Continent Refinery Operations

**Average Daily Crude Runs (Barrels)**

(Based on estimates compiled first of each month by The Oil and Gas Journal)

| | 1929 | 1930 | 1931 | 1932 | 1933 | 1934 |
|---|---|---|---|---|---|---|
| January | 508,550 | 535,460 | 478,795 | 405,910 | 399,405 | 448,360 |
| February | 506,800 | 519,355 | 470,125 | 411,280 | 407,125 | 456,619 |
| March | 514,950 | 531,500 | 449,634 | 401,155 | 423,445 | 465,680 |
| April | 530,530 | 555,250 | 497,391 | 419,750 | 441,000 | 458,220 |
| May | 577,500 | 574,300 | 510,540 | 436,160 | 470,460 | 457,425 |
| June | 583,030 | 572,250 | 567,915 | 440,765 | 479,987 | ..... |
| July | 565,800 | 548,475 | 588,840 | 433,255 | 525,845 | ..... |
| August | 555,250 | 526,400 | 590,545 | 427,710 | 518,510 | ..... |
| September | 552,300 | 498,710 | 588,105 | 430,430 | 526,749 | ..... |
| October | 544,720 | 518,800 | 472,190 | 401,995 | 495,756 | ..... |
| November | 545,473 | 506,700 | 480,440 | 408,180 | 481,335 | ..... |
| December | 540,630 | 478,360 | 456,525 | 416,275 | 434,275 | ..... |

**Operations by Refinery Districts**

| | May 1 dly. crude capacity | May dly. crude runs | April dly. crude runs | May daily decrease |
|---|---|---|---|---|
| Arkansas | 37,550 | 20,850 | 20,650 | *200 |
| East Texas | 183,200 | 66,560 | 90,270 | 23,710 |
| Kansas | 182,650 | 99,830 | 87,350 | *12,480 |
| North Central Texas | 107,800 | 39,995 | 36,025 | *3,970 |
| North Louisiana | 41,750 | 27,875 | 24,400 | *3,475 |
| Oklahoma | 297,300 | 137,895 | 136,420 | *1,475 |
| Southwest Texas | 26,600 | 12,940 | 13,060 | 120 |
| West Texas and Panhandle | 102,475 | 51,480 | 50,045 | *1,435 |
| Total | 979,325 | 457,425 | 458,220 | 795 |

*Increase.

**OKLAHOMA**

| Company and location— | Daily capacity | Aver. daily runs May | Aver. daily runs April |
|---|---|---|---|
| Anderson-Prichard Oil Corp., Cyril | 6,000 | 4,000 | 4,000 |
| Altitude Petroleum Corp. (J. H. Peacock Refining Co.), Oklahoma City | 3,000 | 300 | 300 |
| Associated Petroleum Corp., Allen | 3,000 | (*) | (*) |
| Barnsdall Refineries, Inc., Barnsdall | 6,000 | 3,000 | 3,000 |
| Barnsdall Refineries, Inc., Okmulgee | 10,000 | 3,500 | 3,500 |
| Bell Oil & Gas Co., Grandfield | 4,500 | 2,200 | 2,200 |
| Black Gold Refining Co., Oklahoma City | 2,500 | 1,500 | 800 |
| Century Petroleum Corp., Oklahoma City | 2,500 | (*) | (*) |
| Champlin Refining Co., Enid | 16,000 | 6,000 | 6,000 |
| Columbia Oil Corp., Oklahoma City | 3,500 | (*) | (*) |
| Continental Oil Co., Ponca City | 30,000 | 17,000 | 17,000 |
| Crescent Refining Co., Holdenville | 1,000 | (*) | (*) |
| Cushing Refining & Gasoline Co., Blackwell | 1,700 | 1,500 | 1,500 |
| Cushing Refining & Gasoline Co., Cushing | 4,500 | 3,000 | 2,200 |
| Deep Rock Oil Corp., Cushing | 10,000 | 9,000 | 9,000 |
| Eason Oil Co., Enid | 5,000 | 2,500 | 3,000 |
| Empire Oil & Refining Co., Okmulgee | 4,000 | 2,000 | 1,850 |
| Empire Oil & Refining Co., Ponca City | 12,000 | 7,400 | 7,000 |
| Gem Refining Co., Oklahoma City | 1,000 | (*) | (*) |
| Globe Oil & Refining Co., Blackwell | 7,500 | 6,000 | 6,000 |
| Government Refining Co., No. 1, Oklahoma City | 1,000 | (*) | (*) |
| Government Refining Co., No. 2, Seminole | 800 | (*) | 800 |
| Government Refining Co., No. 3, Oklahoma City | 3,500 | 200 | 850 |
| Hangar Refining Co., Oklahoma City | 1,000 | 340 | 200 |
| Johnson Oil Refining Co., Cleveland | 6,000 | 3,200 | 3,400 |
| Major Petroleum Products Co., Oklahoma City | 2,000 | 725 | 600 |
| Marathon Oil Co., Bristow | 5,000 | 2,400 | 2,300 |
| Mid-Continent Petroleum Corp., West Tulsa | 40,000 | 18,000 | 18,000 |
| Oklahoma City Refining Co., Oklahoma City | 2,500 | (*) | (*) |
| Phillips Petroleum Co., Okmulgee | 6,000 | 5,300 | 4,500 |
| Producers Oil Co., Bristow | 2,500 | (*) | (*) |
| Producers & Refiners Corp., West Tulsa | 6,000 | 3,000 | 3,000 |
| Pure Oil Co., Muskogee | 9,000 | 6,000 | 6,000 |
| Rock Island Refining Co., Beckett | 6,000 | 3,200 | 3,200 |
| Sinclair Refining Co., Sand Springs | 8,000 | 3,400 | 2,400 |
| Sooner State Refining Co., Oklahoma City | 300 | (*) | (*) |
| Sun Oil Co., Yale | 5,000 | 2,000 | 2,000 |
| Sunray Oil Co. (C. E. Wright, receiver), Allen | 7,000 | 2,000 | 2,000 |
| Texas Co., West Tulsa | 15,000 | 4,000 | 8,500 |
| Texas Pacific Coal & Oil Co., Wynnewood | 3,000 | 600 | 600 |
| Tide Water Oil Co., Drumright | 15,000 | 8,000 | 8,000 |
| Triangle Producing & Refining Co., Oklahoma City | 1,000 | 480 | 520 |
| Wilcox Oil & Gas Co., Bristow | 5,000 | (*) | (*) |
| Wirt Franklin Petroleum Corp., Ardmore | 4,000 | 1,800 | 1,800 |
| Yale Oil Corp., Yale | 2,000 | 350 | 300 |
| York Refining Co., Oklahoma City | 2,000 | (*) | (*) |
| Total | 297,300 | 137,635 | 136,420 |

*Shut down.

**WEST TEXAS AND PANHANDLE**

| Company and location— | Daily capacity | Aver. daily runs May | Aver. daily runs April |
|---|---|---|---|
| Active Oil Corp., Arno | 1,500 | (*) | (*) |
| Aero Refining Co., Pecos | 225 | 65 | 15 |
| Coltex Refining Co., Colorado | 10,000 | 5,500 | 7,000 |
| Concho Refining Co., San Angelo | 250 | 75 | 75 |
| Cosden Oil Co., Big Spring | 12,500 | 6,000 | 6,000 |
| Danciger Refineries, Inc., Pampa | 6,500 | 6,000 | 6,000 |
| Howard County Refining Co, Big Spring | 1,500 | 190 | 300 |
| McNutt Refining Co., El Paso | 2,000 | 750 | 580 |
| Panhandle Refining Co., Kings Mill | 2,000 | 1,000 | 1,000 |
| Paramount Refining Co., San Angelo | 2,000 | (*) | 225 |
| Pasotex Petroleum Co., El Paso | 14,000 | 5,500 | 4,000 |
| Phillips Petroleum Co., Borger | 30,000 | 20,000 | 20,000 |
| Shamrock Oil & Gas Co., Sunray | 2,000 | 1,000 | 1,000 |
| Shamrock Oil & Gas Co., Meldavis | 1,000 | 1,000 | (*) |
| Sinclair Refining Co., El Paso | 2,500 | 800 | 800 |
| Texas Co., El Paso | 2,000 | 600 | 400 |
| Texas Co., Amarillo | 4,000 | 3,000 | 2,500 |
| West Texas Refining Co., Pecos City | 6,000 | (*) | (*) |
| Wickett Petroleum Co., Wickett | 2,500 | (*) | 150 |
| Total | 102,475 | 51,480 | 50,045 |

*Shut down.

**NORTH LOUISIANA**

| Company and location— | Daily capacity | Aver. daily runs May | Aver. daily runs April |
|---|---|---|---|
| Bayou State Refining Co., Houston | 750 | 225 | 200 |
| Cedar Grove Refining Co., Shreveport | 1,000 | (*) | (*) |
| Louisiana Oil Refining Co., Shreveport, Bossier | 19,000 | 20,950 | 17,500 |
| Shreveport Refineries, Inc., Shreveport | 500 | 200 | 200 |
| Spartan Refining Co., Shreveport | 10,000 | 4,500 | 4,500 |
| Stanolind Oil & Gas Co., Vivian | 3,500 | 2,000 | 2,000 |
| Texas Co., Shreveport | 7,000 | (*) | (*) |
| Total | 41,750 | 27,875 | 24,400 |

*Shut down.

**ARKANSAS**

| Company and location— | Daily capacity | Aver. daily runs May | Aver. daily runs April |
|---|---|---|---|
| Berry Asphalt Co., Waterloo | 2,000 | 500 | 500 |
| Henry H. Cross Co., Smackover | 6,000 | 3,000 | 3,000 |
| Lion Oil Refining Co., El Dorado | 12,000 | 6,000 | 6,500 |
| Macmillan Petroleum Products Co., Norphlet | 2,300 | 2,000 | 1,800 |
| Ouachita Valley Refining Co., El Dorado | 1,500 | 1,200 | 1,200 |
| Root Refining Co., El Dorado | 10,000 | 5,400 | 5,000 |
| Simms Oil Co., Smackover | 3,000 | 2,500 | 2,400 |
| Stephens Refining Co., Stephens | 750 | 250 | 250 |
| Total | 37,550 | 20,850 | 20,650 |

*In the last two days large buyers in the Mid-Continent have bought and retired from the market an estimated total of 500 to 600 cars of gasoline, most of it third grade*

—CHICAGO JOURNAL OF COMMERCE, May 4, 1934

Distress gasoline isn't abolished when it is "retired from the market" Two things can happen

It can be reformed at low cost by Dubbs-cracking into long mileage, anti-knock gasoline that commands the price Or—

It can be stored at high cost and thrown on the market later—still third grade—to drag down the price of better gasoline

Dubbscracking is the way to make good gasoline from poor gasoline—or from any other charging stock

Universal Oil Products Co
Chicago, Illinois

Dubbs Cracking Process
Owner and Licensor

# California Submarine Pipe Lines Have Eliminated Necessity for Installing Costly Land Lines

By L. P. STOCKMAN
Staff Correspondent, California Fields

LOS ANGELES, Calif., May 14.—Although pipe line construction in California has been a negligible factor during the past two years, Union Oil Co. is making preparations to let a contract for the installation of 15 miles of new pipe line extending from the Mountain View Field to existing facilities at Kern River. The Standard will also install a new short lateral when the company com-

*Monterey, Calif., line ready for launching*

pletes its first producing well in this field. General Petroleum will likely extend its facilities into the Mountain View Field by laying approximately 5 miles of new line within the next few months.

There have been nine submarine pipe lines completed in California, the latest having just been put into operation. Associated Oil Co. has three submarine pipe lines; Standard and General Petroleum two each and Rio Grande and Bankline, one each. Two of these lines are at Elwood, a similar number at Monterey, and one each at Estro, Capitan, Davenport, El Segundo and Ventura. They range in size from 8 to 16 inches in diameter and from 2,510 to 4,000 feet in length. Two of the original submarine lines, one laid in 1924 and another in 1925, were abandoned due to corrosion and breakage but were replaced by new lines.

### Latest Installation

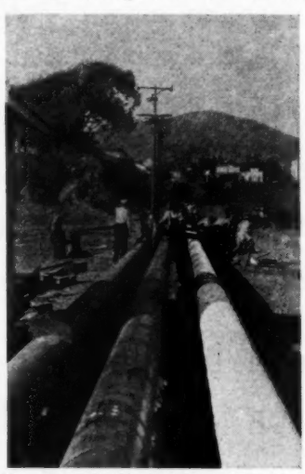
General Petroleum Corp., subsidiary of Socony-Vacuum, finished the latest submarine pipe line laid on the Pacific Coast on April 30, 1934, and the tanker Lebec picked up 70,000 bbls. of crude oil on May 2. This new installation was at Capitan in Santa Barbara County, where General Petroleum discovered a new field a year or so ago. The new submarine line is a 10-inch welded line extending into the open ocean 2,885 feet from the high tide line. Tankage facilities consist of four 1,500-bbl. tanks and one 80,000-bbl. loading tank. Completion of this new loading line will permit General Petroleum to resume production activities on the Erburu lease which has been inactive for about a year due to the absence of pipe line facilities. It is likely also that Shell, which has developed small production in the Capitan Field, will use the General Petroleum installation either for direct loading or on an exchange basis.

General Petroleum has one other submarine pipe line in California but this project, the only one of its kind in California, was laid for the specific purpose of permitting the company to make deliveries of fuel oil to a commercial consumer. This installation is at Davenport and was laid to facilitate deliveries to the Santa Cruz Portland Cement Co. The line consists of 2,510 feet of 13⅜-inch pipe covered with a treated compound to protect it from the corrosive action of salt water. Fuel oil from the tanker is pumped into a 15,000-bbl. surge tank at the Davenport booster station under a pressure of 85 pounds and at a temperature of 118° F. from which point it is simultaneously pumped through a 10-inch line paralleling the coast line to storage facilities of the buyer about 2½ miles eastward. Due to the depth of water and abundance of kelp, General Petroleum found it necessary to lay the submarine line at a right angle from a bend in the coast line with the result that the submarine pipe line almost parallels the 2½-mile pipe line inside the tide line from the booster plant to the consumers storage facilities. Incidentally, the tanker Lebec, which picked up the first cargo of crude oil at Capitan, made the first delivery of fuel oil at Davenport in November, 1929, upon completion of the submarine pipe line at Davenport.

### First Submarine Line

Associated Oil Co., California branch of the Tide Water Associated Oil Co., pioneered submarine pipe line construction on the Pacific Coast by laying a 10-inch line at Ventura in 1924 and a 12-inch crude oil line and an 8-inch gasoline line at Monterey in 1925. These three lines were the first submarine installations in California and Associated Oil Co. still heads the list with three loading lines. Upon the discovery of substantial production in the Kettleman North Dome Field and subsequent development of Temblor and Eocene production in the North Belridge Field of Kern County, Associated deemed it advisable to make preparations to handle any normal emergency. The company accordingly reconditioned its Coalinga-Monterey line by removing all the collars of this screw line and making it a completely welded job from beginning to end.

In December, 1933, Associated Oil Co. found it necessary to replace its 10-inch crude oil submarine line at Ventura which was laid in 1924, due to corrosive activity of the salt water as it had corroded entirely through at a point about 200 feet seaward from the low tide line and thus was almost beyond repair. A new 16-inch submarine pipe line was accordingly started late in 1933 and the 3,500 feet from the block valve on shore to the outboard end of the line was finished in December, 1933, and the first load taken through the line in January,



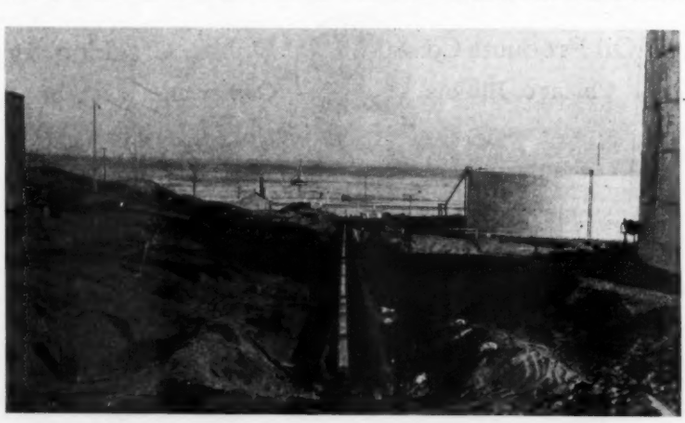
*Ventura, Calif., third string being painted*

1934. This submarine line is of paramount importance as practically the entire production of the Ventura Avenue Field is moved by way of this line. The Ventura Avenue Field has produced 144,182,600 bbls. of crude to the close of March, 1934.

### Installation Record

Associated Oil Co. completed in March, 1933, the installation of a 16-inch submarine pipe line at its Monterey marine terminal on Monterey Bay, California, in what is considered to be record time. This terminal, the marine terminal of the company's Belridge-Monterey pipe line, is an exceptionally important point as all light oil produced and purchased by the company at Kettleman Hills and Belridge is moved by tanker by way of this line either to its Avon or Wilmington refinery. Associated's original installation at Monterey was completed in 1925 but the 12-inch crude oil line was broken in January, 1933, when the breast lines of a tanker, which was loading oil, parted and placed an undue strain on the loading hose and submarine pipe line with the result that both the hose and pipe broke.

Associated Oil Co. accordingly decided to replace the old 12-inch submarine pipe line with a new 16-inch line. Since storage facilities for crude were rather limited, it was necessary the new line be installed as soon as possible in order not to interfere with operations of other departments of the company. The new line was laid in approximately the same location as the old 12-inch line and extends from the pump house on shore to a point about one-half mile into the bay where there is a depth of about 52 feet of water. The time required to launch the entire line was 48 minutes, the first section being pulled out in 21 minutes. It required four hours to place the second section on the ways, lash sand bags to it for submergency, and weld the two sections together. Twenty-seven minutes later the entire line was in its final position in the bay and a diver went below and opened a valve at the end of the line to permit it to fill with water. A heavy concrete block was cast around the pipe on the shore to hold it securely in position. Associated's 16-inch submarine pipe line at Monterey, which is equipped with 160 feet of flexible rubber hose at the seaward end, extends beyond the tide line 2,640 feet.



*Monterey, Calif., line ready for launching; barge moving into position*

### Standard's Lines

The Standard Oil Co. has two submarine loading and discharging pipe lines in California, one a combination crude and gasoline line. This is at Estero Bay in Monterey County where the company has established a western terminal for its Kettleman-Estero system. The original installation was a crude oil line designed to handle Kettleman crude but this was subsequently augmented by the laying of a natural gasoline line from the Kettleman North Dome to tidewater at Estero. Standard has been using the submarine loading line for both crude and natural gasoline as ample facilities were provided to cleanse the line after each delivery. Standard's submarine installation at Estero consists of 3,000 feet of 16-inch pipe and construction work was completed in December, 1929.

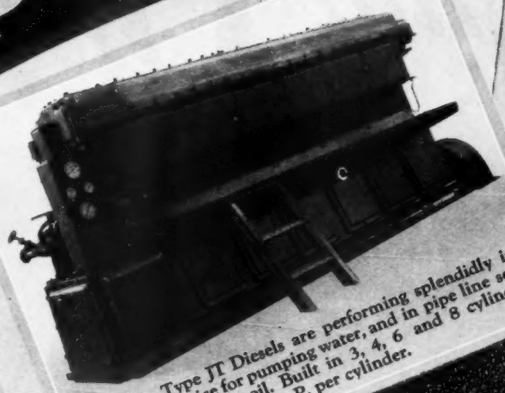
Standard's latest installation was at El Segundo, in southern California, where the company completed a new submarine line in June, 1933. Practically all the fuel oil the company has delivered to the Standard of New Jersey has been loaded through this installation. The El Segundo submarine line consists of 3,200 feet of 16-inch pipe which enters the water at the seaward end of a wharf which extends out into the surf for a distance of 2,200 feet. Standard's original wharf at El Segundo extended out in the ocean 4,000 feet but in the winter of 1914 an exceptionally heavy storm destroyed the outer 1,800 feet. The 16-inch submarine line is tied into Standard's El Segundo tank farm by a 20-inch line extending from the outer or seaward end of the 2,200-foot wharf.

### Elwood Lines

There are two submarine pipe lines in the Elwood Field, Santa Barbara County, and together they have handled practically all of the field's total production. At the close of March, 1934, Elwood had produced 46,979,591 bbls. of crude since discovery. Rio Grande Oil

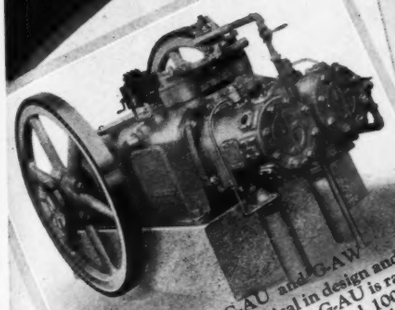
(Continued on Page 48)

# ALL NEW since the last EXPOSITION



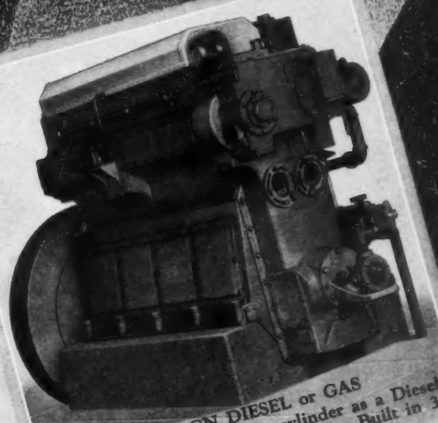
Modern Type JT Diesels are performing splendidly in refinery service for pumping water, and in pipe line service for pumping oil. Built in 3, 4, 6 and 8 cylinder sizes, rated 55 to 60 H. P. per cylinder.

The United States Coast Guard recently chose 12 new Type EN marine Diesels for service afloat. The Type EN stationary engine is the most advanced oilfield Diesel built today. Available in 3, 4, 6 and 8 cylinder sizes, rated from 21 to 27 H. P. per cylinder. Will soon be available as a gas engine.



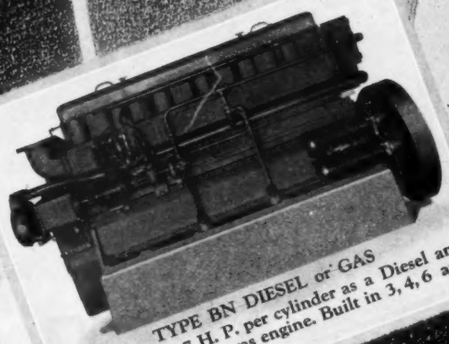
TYPES G-AU and G-AW

These engines are identical in design and have both been field tested. Type G-AU is rated 60 to 100 H.P. Type G-AW is rated 100 to 140 H.P. and is convertible to full Diesel.



TYPE GN DIESEL or GAS

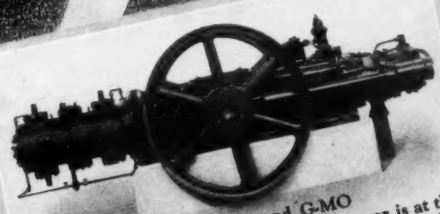
Rated 45 to 55 H. P. per cylinder as a Diesel and 47 to 60 H. P. as a gas engine. Built in 3, 4, 6 and 8 cylinders.



TYPE BN DIESEL or GAS

Rated 13 to 17 H. P. per cylinder as a Diesel and 17 to 22 H. P. as a gas engine. Built in 3, 4, 6 and 8 cylinders.

NEARLY four years have passed since the last International Petroleum Exposition at Tulsa. On this page are shown some of the engineering highlights in the Cooper-Bessemer development program since October, 1930. No similar period in our 101 years of building engines ever accomplished so much research, modernization and betterment. Your company can profit by these advancements in gas and oil engine power. Investigate now.



TYPES G-MG and G-MO

A type G-MG gas engine driven compressor is at the Tulsa Show. Stop at the Sullivan Exhibit and see this compressor driving a Sullivan Pneumatic Pumping Head. Horse Power of G-MG 30 to 50.

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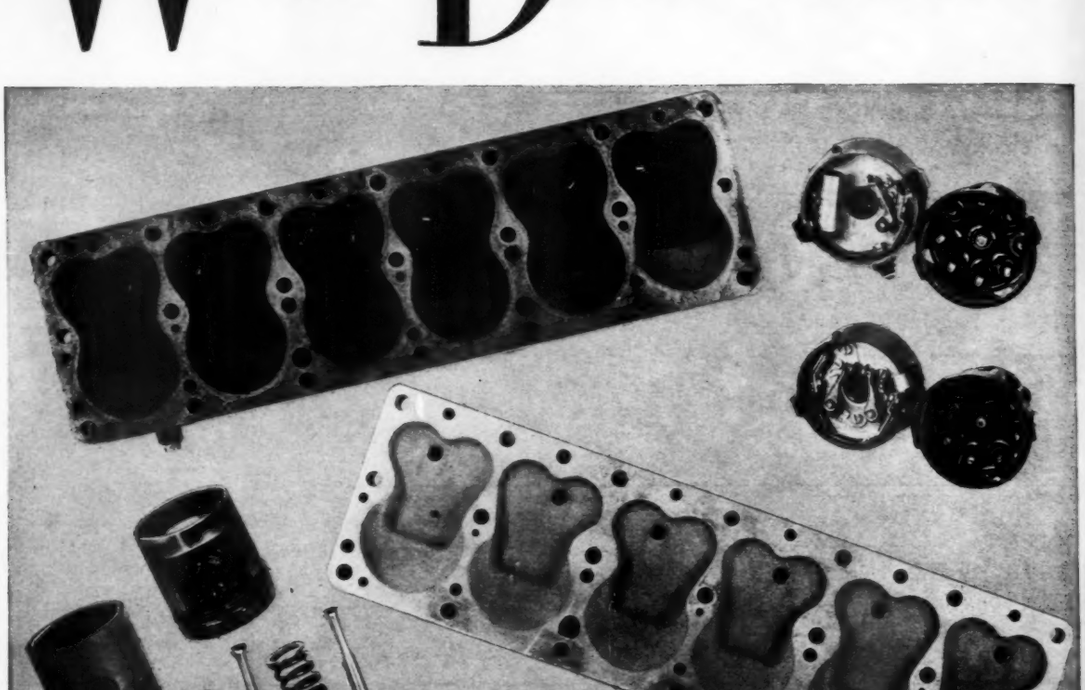
# What Determines



# SIZE, SPEED

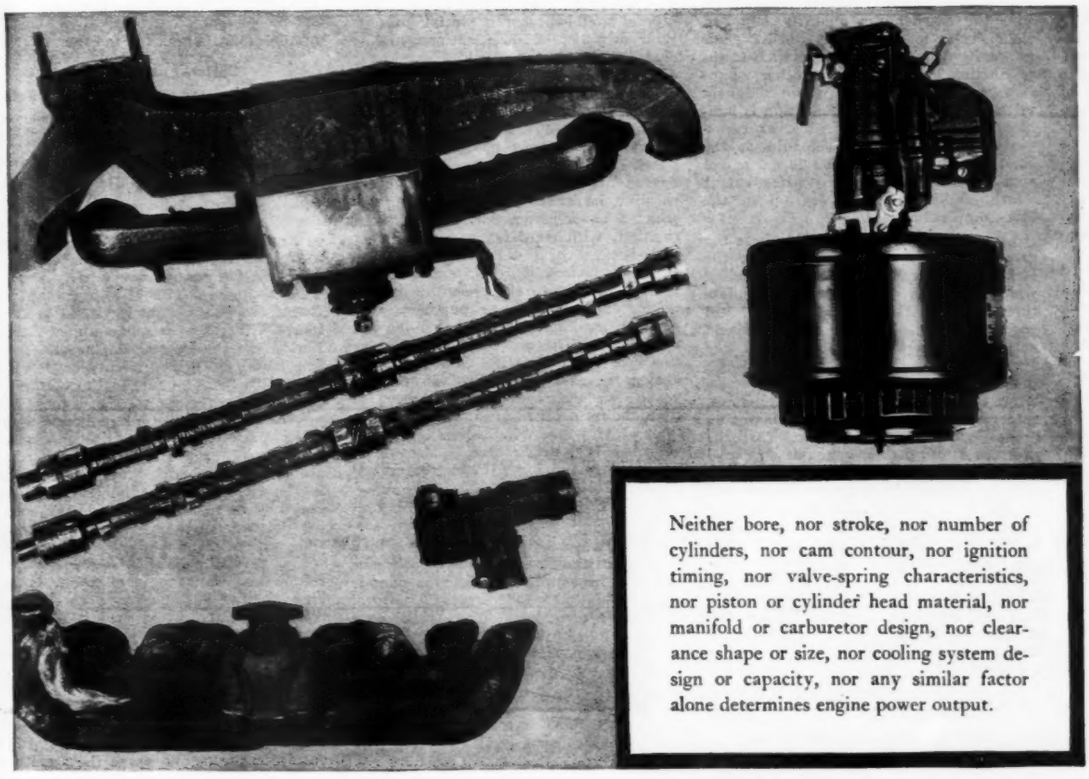
HOWEVER they are achieved—and regardless of how many component factors enter their achievement—an engine's *size*, its operating *speed*, and its working *pressure* are the three factors that affect power output. An increase in any one of these three factors will result in a proportional increase in power, provided the other two are not changed.

It may be possible to increase the compression pressure at which your engine will operate satisfactorily on a given fuel by changing the combustion chamber shape, or retarding the spark slightly, or using a high thermal conductivity material for cylinder heads, or applying less heat to the inlet manifold, or by abnormal cooling of valves, or by all of these methods. If it is found that any or all of these contribute to performance characteristics (without adding too many dollars to manufacturing cost), it would certainly seem advisable to make the necessary changes.

BUT—

When all this is done, it will still be possible to further increase the compression of the engine and develop a corresponding increase in power if fuel of better anti-knock value is pro-

# POWER?



Neither bore, nor stroke, nor number of cylinders, nor cam contour, nor ignition timing, nor valve-spring characteristics, nor piston or cylinder head material, nor manifold or carburetor design, nor clearance shape or size, nor cooling system design or capacity, nor any similar factor alone determines engine power output.

# AND PRESSURE DO

vided. Ethyl Gasoline has sufficiently high anti-knock value to permit the development by a given engine of substantially more power than can be produced by the same engine on any other generally available fuel.

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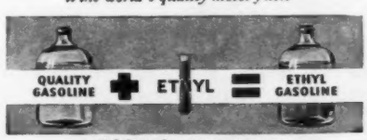



© Ethyl Gasoline Corporation, 1934

# Pioneer Work of Exporting Natural Gasoline Is Done and Future of That Business Brighter

By NEIL BUCKLEY
Cities Service Export Oil Co.*

Something more than 20 years ago was inaugurated the shipment of refinery products from the Mid-Continent Field to the Gulf Coast for export movement. Into the gasoline which became part of such export cargoes, was blended natural gasoline. It might, therefore, be said that the exporting of natural gasoline began at that time. It was not, however, until 1923 that the first consignment of natural gasoline was shipped from the interior to the Gulf Coast for cargo loading and movement abroad. The European buyer of this cargo was so skeptical of the ability of the shipper to make delivery, that the order was entered only on agreement that the material could be placed in the buyer's tanks on the Continent. The sale was heralded as a sensation, but the shipper soon discovered that fulfillment of his contract presented unforeseen difficulties. There was the problem in securing a tanker which would carry the product, and unprecedented negotiations were necessary before a ship charter was signed, which would permit the loading of 14-pound stabilized natural gasoline. News of the safe arrival of the material in Europe developed great interest any many inquiries, but a considerable period of time elapsed before many purchasers were found who would accept cargoes other than a 50 per cent blend of natural gasoline and refinery gasoline.

### Fear No Longer Present

Gradually, through sales promotion and educational efforts on the part of individual manufacturers and export marketing companies, the fear of handling highly volatile liquids in ocean tankers was eliminated. Ship owners gradually increased the maximum vapor tension which would be accepted, until in 1927 or 1928 it was found possible to load a maximum of 20-pound stabilized gasoline. In a few instances a product slightly more volatile has been handled, but in such cases the charter involved a tanker owned by the company purchasing the cargo.

Efforts have been made from time to time to export, particularly to Europe, the by-products of natural gasoline. Investigations have shown the great possibilities of developing in Continental Europe a market for butane. The reluctance of cargo ships to carry bottled gas, even as deck-load, has necessarily slowed progress in opening such a market. One company has equipped one or more tank steamers with high pressure compartments for the movement of this commodity in bulk from the Gulf Coast to Europe, where it is bottled for distribution. This venture must, up to the present time, be considered as missionary work, and until such time as increased transportation facilities are available the foreign market for butane cannot be considered as one of great importance.

### Confuse Exports

It seems unfortunate that there is not a clearer understanding on the part of individual refiners and natural gasoline manufacturers of the term "export or coastwise movement." Because of this lack of understanding, the use of the phrase "export inquiry" too often develops the thought that the placing of an order for a cargo means the accumulation of surplus gasoline, higher prices, and the end of the shippers' sales problems. Several years ago the sale of a cargo of stabilized gasoline was of immediate help to the market, but at the present time the few companies who handle the bulk of the cargo demand for stabilized gasoline, originating in the Mid-Continent Field, maintain storage at Gulf ports and carry inventories of at least two grades of gasoline. A sale by any of these agencies seldom brings them into the market for quantity supplies, their replacement of stocks being made gradually from their own current surplus production or from that of other manufacturers. In California where the bulk of the natural gasoline production is handled by refiners in that area, or transported to their affiliate companies on the East Coast, cargo inquiries do not affect spot market prices to the same extent which similar inquiries develop in the Mid-Continent Field.

Export sales agencies possibly bear the greatest burden of responsibility for the lack of co-operation and understanding which seems to exist between manufacturers and cargo shippers of stabilized gasoline. Yet the exporter cannot be held entirely to blame for this condition. The development of cargo business has been the result of pioneering and long sales effort on the part of individual companies, rather than of the entire manufacturing group. It is, therefore, natural that the protection of secrecy should surround sales activities. There never has been and never should be any mystery involved in the loading of a tank ship. The one question is, where are the markets and how can they be developed to absorb a greater percentage of the product manufactured in the gas-producing country. Whether the development of such markets will continue to depend upon the efforts of individuals or upon the manufacturers as a group, is a question for the membership of this association, in co-operation with the entire American oil industry, to decide.

### Need Standard Specifications

Just as important as the developing of the cargo market would seem to be the adoption of standard specifications under which the coastwise or European buyer might purchase the various stabilized grades. At one time when natural gasoline prices were considerably higher than refinery gasoline quotations, there developed the practice of blending low end-point refinery gasoline with the stabilized and 26-70 grades. Purchasers who placed orders with the desire of obtaining a high percentage of recovery at low boiling points, were disappointed in the product they received. As a result many for a time discontinued purchasing, while others would accept material only on their own list of specifications, and included boiling ranges which were very difficult to meet. It is believed that established limits for gravity, boiling percentages and possibly an octane number, would be found desirable specifications in which to interest prospective regular purchasers. An increasing number of buyers are asking that export natural gasoline be guaranteed under 350 end-point, a specification which the exporter can not, with consistency, agree to furnish because of the industry's adoption of the maximum 375 endpoint. Attention is also directed to the recent inclination of European buyers to purchase, even refinery gasoline of guaranteed low vapor tension. The many shipments of refinery aviation from the Gulf to Europe during the past year which showed high vapor tensions, have caused buyers to seek the protection of a vapor tension limit of 11 pounds, indication that while volatility is desired, there is also an increasing demand for a product of greater stability.

### Lack Statistics

From time to time efforts have been made by various petroleum associations and governmental agencies to compile statistics on the movement of natural gasoline into various channels. Because of the intermingling with refinery gasoline at seacoast shipping points, accurate data on cargo movement of stabilized gasoline is not available. During the year 1933—based upon information from the U. S. Department of Commerce, and other agencies—it is estimated that approximately 120,000,000 gallons of various grades of stabilized natural gasoline moved in cargo lots from Gulf ports to Europe, to Canada and to the Atlantic Seaboard. This figure represents approximately 15 per cent of the total quantity of natural gasoline manufactured in the Mid-Continent Field. The percentage would be higher if the vapor tension of each cargo could be identified, and the quantity involved converted back to the 26-70 grades. It would seem, therefore, that unless there is a curtailment of natural gasoline manufacture or a marked increase in the use of the product by domestic refiners, the cargo market must be greatly increased as a means of obtaining stability in the interior.

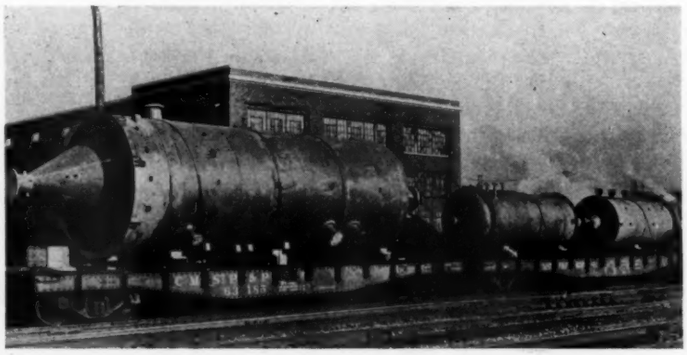
### Better Future Ahead

European outlets for natural gasoline have been curtailed during the past year through the exporting, from this country, of large quantities of high gravity crude and highly volatile East Texas gasoline to countries on the Continent, previously large consumers of natural gasoline. The curtailment of such movement and the operation of refineries in some countries on lower gravity crudes, which will be available to European refiners late this summer, should tend to increase their imports of stabilized gasoline. Along the East Coast, natural gasoline is consistently used by but few refiners. There is no rule of thumb for the failure to regularly purchase the product. Each refiner has his individual operating preference. Some use a greater quantity of natural gasoline when they are operating on high gravity crude than is the case when they operate on low gravity crude and engage in heavy cracking operations. We too frequently associate the demand for natural gasoline with a reverse condition. A few seaboard refiners continue to have a surplus of high volatile gasoline from their vapor recovery plants. In general it might be stated that the increase in marketing of higher octane, middle bracket gasoline and the curtailment of reforming operations occasioned by the use of lead, should enable the eastern refiner to use a greater quantity of stabilized gasoline, not only from a desire to obtain volatility but from the octane value the stabilized gasoline offers. One thought has been advanced by several Atlantic Seaboard operators—namely, that the wide fluctuation in the price range of stabilized gasoline was a major factor in their present refusal to consistently use the product for blending. At least one of these companies stated that, could supplies of not higher than 20-pound material be obtained at or near the price for 65 octane gasoline on the Gulf Coast, contracts would willingly be made for year-around shipments.

Whether natural gasoline can and should be made available to European and East Coast refiners, who are willing to contract, on the basis of the Gulf posted price for refinery gasoline, seems a problem to be studied not only by individual manufacturers and exporters, but by the association itself. Very few contracts made on this basis in the past have been satisfactory to both buyer and seller, but some acceptable method must be made available if contracts on tank car shipments in the domestic market are not to be hazarded by the feast or famine condition which exists in the spot cargo market. One opinion becomes uppermost in the mind of anyone investigating this subject. That, with the present available production of natural gasoline in the Mid-Continent Field, new outlets must be sought, and the Atlantic Coast and Europe with practically no natural gasoline production offer the best possible markets for manufacturers' surplus.

*Paper delivered before Tulsa meeting of Natural Gasoline Association of America, May 9-11.

## Nickel-Steel Vessels to Stand Low Temperatures



*Three nickel-steel vessels being shipped to the Union Oil Co.'s refinery at Oleum, Calif., for use in the company's new propane dewaxing plant. These were fabricated from this special steel because a temperature of 40 degrees below zero is used in the process and at that temperature ordinary steel is as brittle as cast iron and its use would be hazardous*

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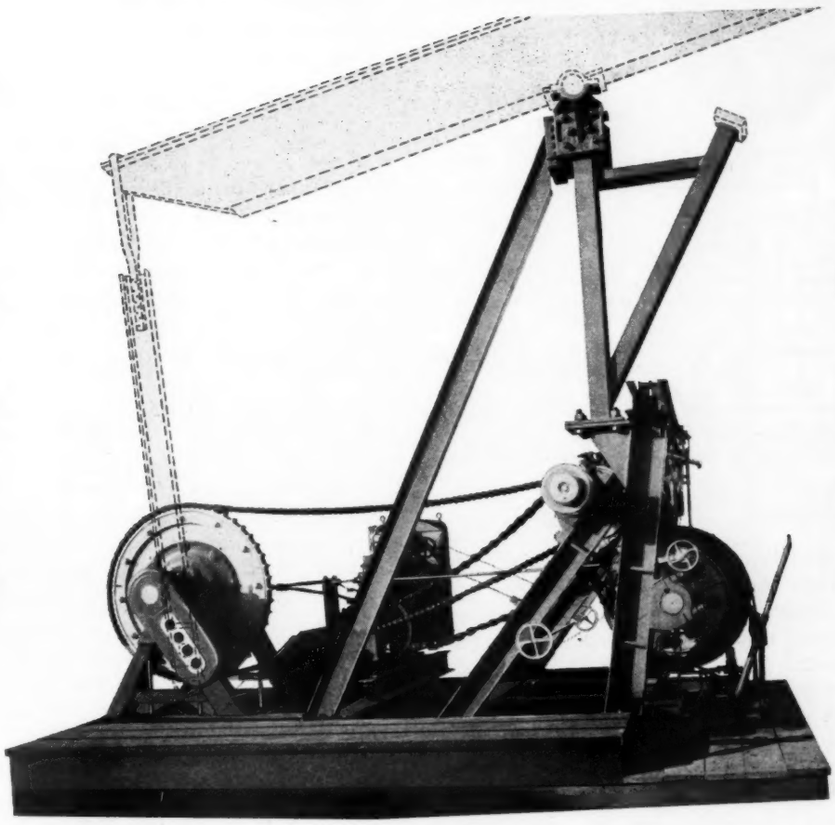

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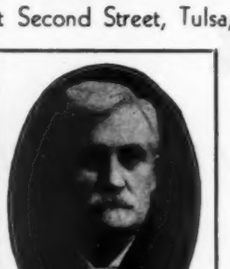

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## Revision Should Be Revised

The revised Federal control bill prepared for introduction in the House of Representatives differs from the original presented in the Senate chiefly in the section dealing with imports and in narrowing control to crude and to products made from crude known to have been produced in excess of quota.

The only date of limitation in the bill is in the section on imports which provides that "Prior to the end of 1935 the Secretary of the Interior shall not permit in any month the importation of crude or the products thereof in a greater quantity than the average monthly rate in the last six months of 1932."

He may also prescribe quotas for production but "so long as valid regulations issued by any duly authorized State board, commission, or officer prove effective in the opinion of the Secretary of the Interior this section shall remain inoperative within that State."

Texas is thus assured its State right to regulate, if it will regulate. If regulation by the Texas Commission had been effective there would have been no need for a Federal law.

President Roosevelt's insistence upon action is expected to produce results, and it is assumed there is more chance of the bill becoming law than appeared a week ago.

Fears of Federal control are mitigated by the fact that the producing branch of the industry is already under State control and that the revised act does not attempt to control anything but production except in imports.

Desirable as self-government by the industry may be it is plain that, until some form of stability is attained, Federal control is essential. It would be more reassuring if the bill contained some qualification indicating that it was not necessarily to be permanent. The day will come when the industry's worry will be underproduction rather than overproduction and outside control would prove a handicap.

Then, too, the industry's confidence in Secretary Ickes might not be given to another and the permanency of a Petroleum Administrative Board of five, at $12,000 a year each, and their attorneys, economists, geologists, statisticians and other employes, (to be paid by the industry,) suggests a bureaucratic despotism calculated to irk the oil man.

The absence of any reference to the Planning and Coordination Committee "fairly representative of the oil industry"—whose subcommittees have been concerned with production as well as refining and marketing, increases the disquiet occasioned by the qualification that "no person having a direct pecuniary interest in the petroleum industry, or who is in the employ of any person engaged in the petroleum industry, shall be a member or employe of the board." While intended no doubt to imply impartiality it may also mean ignorance of the oil industry.

Provision for administration there must, of course, be, but the bill should properly set a term to it so that it shall be understood it is for the emergency and not forever.

The oil industry should not be singled out to be put in a permanent strait-jacket. As soon as the emergency ends it should be free to resume control of its affairs like any other industry.

This should be assured before any bill is passed.

## No Extortion Found

The latest investigation of the oil industry, the investigation of gasoline prices by the Federal Trade Commission at the request of the Senate, has resulted, like all that have gone before, in disproving every charge made against the industry.

Senator Borah wrote Administrator Ickes last December that "my investigation leads me to state that since June 1, 1933, the prices for gasoline alone have increased at the rate of nearly a half billion dollars annually, to be exact, $486,000,000."

The N.R.A. Consumers Advisory Board was even more wild-eyed, talking excitedly at one time of a possible increase of a billion dollars.

The Federal Trade Commission, after official investigation, reports that "the estimated net increase during the seven months from July 1, 1933 to January 31, 1934 was 1.04 cents per gallon, amounting in the aggregate to approximately $160,550,000 annually."

The difference apparently was in Senator Borah's imagination, or his gullibility.

It is curious that the daily newspapers throughout the country in headlining the commission's report featured the fact that gasoline is costing the consumer $160,550,000 more as if that were a terrible imposition but making no fuss about the commission's further statement that gasoline taxes cost the consumers approximately $700,000,000 a year.

The Federal tax alone, now a cent a gallon, is taking as much from the consumer as the advance in price.

And that advance in price is not an increase over normal prices. It is simply a partial restoration of price and for that matter will no more than meet the additional expenditures for employment under the code.

The price of gasoline on June 1, last year, was $400,000,000 less than the price on June 1, 1932. It was $1,050,000,000 less than on June 1, 1929.

The price today, with this cent a gallon restored, is still less than the 20-year average from 1913 to 1934.

It is a cent a gallon less than it was last September right after the code was signed, as attested by the Federal Trade Commission in this report which says "it should be noted that the gasoline market was demoralized during the spring and summer of 1933 and that the average dealer service station price, excluding taxes, was lower on July 1, 1933, than on July 1 of any other year than 1919."

The January 1, 1934, average was only 19.51 cents compared to the January 1926, average of 21.31 cents.

The Federal Trade Commission report verifies every statement brought out in The Oil and Gas Journal articles on this subject in the past eight months. Unfortunately, as presented to the public in the daily press, the Commission's report conveyed a wholly wrong impression to the hasty general reader who depends mainly on headlines. The industry could not do better than to brief the salient points of the report and hand them out at the service stations this summer.

SINCE POWELL VALVES were first introduced to the engineering public in 1846, The Wm. Powell Company has pioneered many notable advancements in valve design, workmanship, and materials. Today Powell Products include a complete line of bronze, iron, steel, and special corrosion resistant valves and fittings.

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VALVES

# Improved Group 3 Gasoline Market Is Expected to Result From Purchase of Distress Stocks

By T. F. SMILEY

Pronounced improvement in the motor fuel market was expected to follow the announcement made Tuesday of this week that major refiners would comply with the recommendation of the Planning and Coordination Committee that they purchase 3 per cent of their May gasoline requirements from smaller companies instead of taking this material from their own stocks.

It was said that when the P. and C. Committee made this recommendation on May 8 it was estimated that 3 per cent of the May requirements throughout the United States would represent 147 cars daily. Since one-half of the month had passed before the plan was set in operation it was not made clear whether the buying would be at the rate of 147 cars daily or not, but it was stated that the purchases made under the plan would clean up every barrel of distress gasoline in the Mid-Continent.

### Jumpy Market Prevails

A jumpy market in refinery gasoline prevailed in the Oklahoma (Group 3) territory during the last week, but the natural product was exhibiting an increasingly firmer tone. Neutrals, whose vigorous forward push has been a feature of the market for the last six weeks, not only gained fresh strength, but recorded a price advance to prove it.

The erratic action of the refinery gasolines was traceable in large measure to the recommendation made by the Planning and Coordination Committee concerning the removal of distress stocks.

When rumors of the committee's action reached the smaller refiners in the middle of last week there was a general stiffening of quotations and an unwillingness to sell under them. These smaller refiners held out as long as they could for the better market which they assumed was in the making, with the result that still heavier overaccumulations of gasoline soon were awaiting buyers who did not appear.

### Then Prices Dropped

Low octane U. S. Motor material, which had been held at 3¾ and 3⅞ cents resale, was offered at 3½ to 3⅝ cents; and the 400 endpoint grade, which had been held at 3⅞ and 4 cents resale, was now obtainable from disappointed refiners at 3⅝ to 3¾ cents. And even then there was no scramble of buyers.

On Friday a Washington, D. C., representative of East Texas refiners wired to these men asking for information concerning the quantity of gasoline overhanging the market in that area. He asked also if these refiners would be willing to reduce their runs to stills and to keep them reasonably close to consumer requirements if a means were found to take off their hands most of the surplus stocks which they already had piled up.

What reply was made to these inquiries is not generally known, but they apparently renewed the hope of better conditions, for the refiners again withdrew their lowered quotations. Owners of low octane Motor gasoline were holding out for 3¾ cents resale Group 3 and small independent refiners were waiting for definite information from Washington.

### Natural Gasoline Firmer

A distinct firming of the natural gasoline market was seen in the last week, and it was regarded as much better than it was at this time last year. Throughout the period of low prices which have prevailed the larger operators have preferred to buy and store rather than to sell. This disinclination to dip into storage has exerted a slight but nevertheless steady strengthening influence, with the result that this week there was not only a stiffening of prices but actually a scarcity of material which the owners were willing to sell at prevailing quotations.

One major company was said to be in the market for 25 to 50 cars of natural gasoline in the last week and at latest reports had not succeeded in placing its order. Another large manufacturer of natural has been buying steadily to take care of its orders.

The attitude of big companies with storage facilities is that so long as natural gasoline prices are below the cost of manufacture (and they have been for many weeks) it is better business to keep their tanks full and to buy from those who must get rid of their output at once than it is to employ their own plants in making a product for the fun of selling it at a loss. Their stored material they of course expect to dispose of later at a profit.

### Neutrals Still on Upgrade

The neutrals were gathering new vigor this week and three-quarters of a cent was added to the price of all the viscous grades on Monday, with the demand exceeding the supply. One buyer was hunting for 25 cars of neutral oils, with apparently little prospect of finding them. Bright and cylinder stocks were strong.

There was no change in kerosene quotations and little change in demand.

Gas oils and the low-grade fuels were stronger, with slightly better prices.

A little improvement in wax was noted, more inquiries coming in than last week.

## Refined Oil Market Barometer

A more cheerful tone was perceptible in the gasoline market as word spread that a plan was being put into operation designed to remove distress stocks. Prices were beginning to advance in several areas. Even those who doubted the permanent value of the plan conceded its immediate benefits. The natural gasoline trade was feeling more optimistic, with stocks closely held by all manufacturers owning storage. Lubricants buoyant.

**Mid-Continent**—Refinery gasoline erratic, but steadying under the influence of the plan to absorb distress stocks. Natural gasoline firm. Neutrals up.

**East Coast**—Gasoline market looking better and prices advanced. Price war in metropolitan New York believed ended. Neutrals and bright stocks strong.

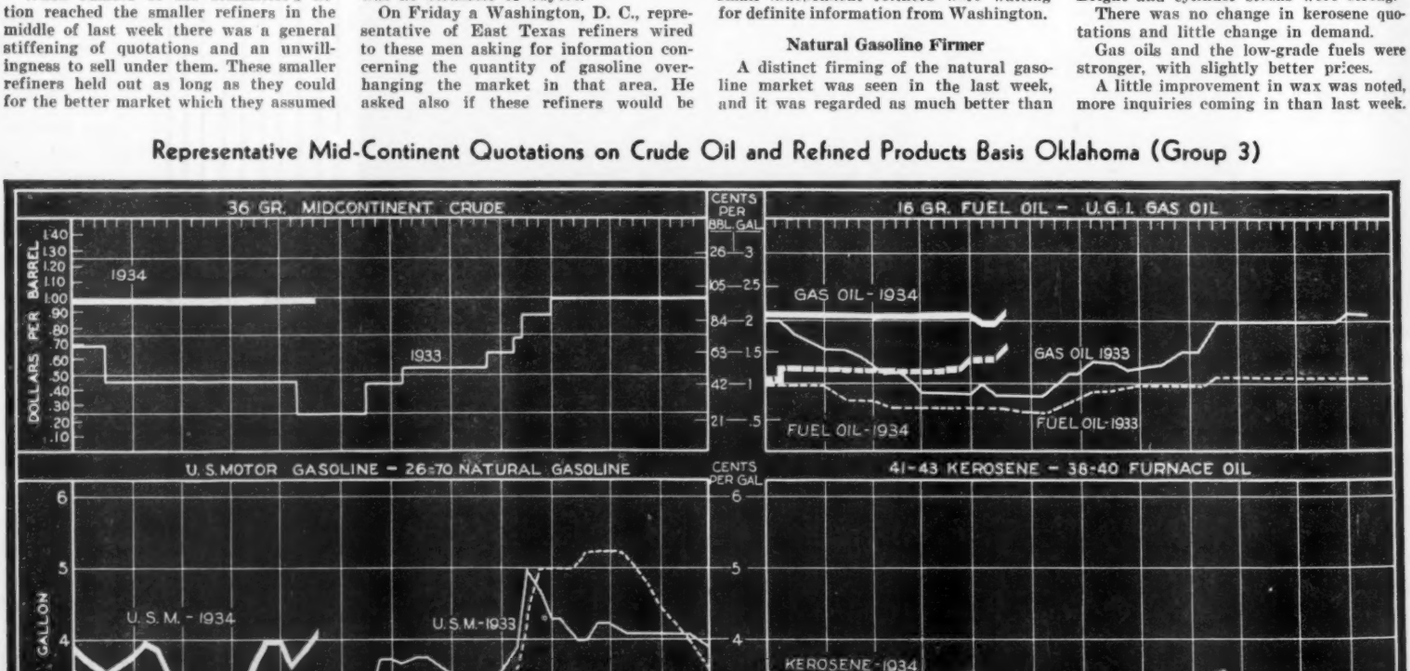
**Gulf Coast**—Gasoline listless, but prices holding. Kerosene off. Gas oil scarce.

**Pennsylvania**—All gasolines stronger. Neutrals scarce. Bright stocks firm. Wax weaker.

**California**—Marketing agreement still unsigned. No changes in refinery prices.

**Chicago**—Gasoline firm, with limited offers. Kerosene irregular. Fuels and gas oils tight and strong. Naphtbas quiet.

## Representative Mid-Continent Quotations on Crude Oil and Refined Products Basis Oklahoma (Group 3)


36 GR. MIDCONTINENT CRUDE
DOLLARS PER BARREL
1934
1933
CENTS PER BBL. GAL
16 GR. FUEL OIL - U.G.I. GAS OIL
GAS OIL - 1934
GAS OIL 1933
FUEL OIL - 1934
FUEL OIL - 1933
U. S. MOTOR GASOLINE - 26-70 NATURAL GASOLINE
CENTS PER GALLON
U.S.M. - 1934
U.S.M. - 1933
NATURAL - 1934
NATURAL - 1933
CENTS PER GAL
41-43 KEROSENE - 38-40 FURNACE OIL
KEROSENE - 1934
KEROSENE - 1933
FURNACE OIL - 1934
FURNACE OIL - 1933
JAN. FEB. MAR. APR. MAY JUNE JULY AUG. SEPT. OCT. NOV. DEC.

# Eastern Refined Market Improves, With Better Prices and More Stable Trade Conditions

By C. O. WILLSON
New York Bureau, The Oil and Gas Journal

NEW YORK, May 14.—Aided by advances in tank wagon and service station prices over a wide area, the gasoline tank car markets in the eastern territory presented a better appearance today than they did earlier in the month. On Friday, May 11, the Standard Oil Co. of New York, Inc., advanced gasoline tank wagon and service station prices 1 cent per gallon in metropolitan New York and on Saturday the Standard Oil Co. of New Jersey followed with a one-half cent advance throughout its territory including Standard of Louisiana territory with the exception of Arkansas. The New Jersey Standard advance did not apply to points where prices have been subnormal, including Washington, D. C., which has a price war situation with a wide variation in quotations.

The Standard of New York advance follows the action of the previous week in which gasoline tank wagon and service station schedules were advanced 1 cent in Brooklyn, Queens and Nassau Counties and one-half cent in Suffolk County, bringing schedules in these large consuming areas in line with the remainder of the metropolitan New York. In connection with its latest advance the Standard of New York announced:

"It looks today as if the price war that has been disturbing the gasoline industry in the metropolitan area has been finally settled. This price war, started by dealers in the Brooklyn area some weeks ago, spread to dealers in other parts of the city andd was met by a general price reduction on the part of oil companies. After several weeks of this price warfare, the recent increases, 1 cent on Monday and another on Wednesday have practically restored the normal price structure and peace reigns again in the industry here."

So far as known, all the major distributors have met these advances by the New York and New Jersey Standard companies or will do so today. In making these advances most of the companies also advanced the tank car quotations on their branded regular grades of gasoline. The Standard of New Jersey advanced the tank car quotation in the Bayonne and New York district on its Essolene from 6 to 6½ cents and other companies made similar advances.

The situation in regard to the unbranded grades or those not containing ethyl fluid was more confusing. Prices on these grades have ranged from 5½ to 6¼ cents in the New York harbor area. Some gasoline from the Gulf Coast usually given a low octane rating has been available as low as 5½ cents and it is known that gasoline with a guaranteed minimum rating of 65 has been offered as low as 5¾ cents although most companies were asking a low of 6 cents for this grade. It is expected that all these prices will advance at least one-fourth cent per gallon with predictions of additional advances before the end of the month.

### Expect Additional Advances

Those who are in close touch with developments believe that tank wagon and service station prices in this territory will advance an additional one-half or 1 cent per gallon in the immediate future. The objective, it is said, is to regain the ground lost earlier in the year when prices were reduced due to a weak tank car market brought about by low priced material at the Gulf Coast. Early last fall when the $1 per barrel crude oil price schedules became effective in the Mid-Continent, tank car prices were advanced here in line with the additional costs. The prices established were minimum and it was hoped that quotations could be advanced to more profitable levels in the immediate future. Instead, refiners began to have difficulty in maintaining the higher prices and finally after the first of the year there was a general slump in quotations. The reductions reflected a weak tank car market centering in the Mid-Continent and Gulf Coast.

It is felt that unless the recent advances are supported and prices maintained at profitable levels, certain companies will no longer support the present schedules for crude oil and the latter will decline in line with conditions existing in refinery markets. In brief, the price increases in gasoline are interpreted in some circles as in the nature of a final effort to support the government-sponsored program of better prices for crude oil, a program which many feel has worked a hardship on the refining end of the business due to the fact that refinery prices—particularly gasoline—have not advanced in line with the increased costs. The success of the present upward move is thus dependent in a large measure on the results of the efforts now being made to remedy existing weaknesses in the government program centering around the excess production of crude oil and gasoline.

### Increased Costs

It is also pointed out that higher prices are desirable in the tank wagon and retail ends to take care of increased costs in merchandizing. Shorter hours and increased wages have materially added to the cost of tank wagon deliveries and retail station operation at practically all points and it is contended that an additional spread of 1 or more cents per gallon between the delivered tank car prices and service station prices is needed to offset the increased costs. Since the added expense obviously cannot be absorbed in the tank car prices there is only one alternative and that is to advance the prices paid by the consumers. With this situation in mind, coupled with the need of higher prices to place oil company operations on a profitable basis, there are those who are predicting a general advance of 2 cents per gallon throughout the greater part of the United States in the next 30 days.

### Neutrals and Bright Stocks

Quotations on low cold test bright stocks and paraffin base neutrals are from one-half to 1 cent higher in the market. Gulf Coast neutrals also are higher.

Sellers are asking 30½ to 32 cents per gallon in bulk for a 10 pour Pennsylvania Grade bright stock in bulk and 6 to 7 cents more per gallon in barrels for export movement. The domestic market in bulk sales is active but new export business is slow. Practically the same prices are being asked for 200-3 Pennsylvania neutral oil. One refiner has advanced his quotation at the Gulf to 10 cents for 500 neutral oil. This was an advance of one-half cent per gallon and similar advances were made in the higher viscosity grades.

Wax stocks are accumulating in this territory and other refining centers. The Bureau of Mines figures for March show that stocks again increased during that month following increases in January and February. Crude scale wax is weak at a low of 3½ cents in this market and prices on the refined grades with practically no export buying are largely nominal so far as new business is concerned.

### Kerosene and Distillate

The kerosene and distillate market in this territory can be described as weak in spot sales but strong in the matter of long-time contracts extending through the main consuming season for these products. As explained last week sellers wishing to move material immediately have given prices concessions. These sellers include coal dealers, furnace oil dis-

(Continued on Page 123)

## American Petroleum Institute Weekly Refinery Statistics

Figures below reported for week by American Petroleum Institute. (1) Per cent refinery capacity represented. (2) Daily average crude runs to stills. (3) Finished motor fuel stocks at refineries, bulk terminals, in transit and pipe lines. (4) Gas oil and fuel oil stocks. All figures in 42-gallon barrels.

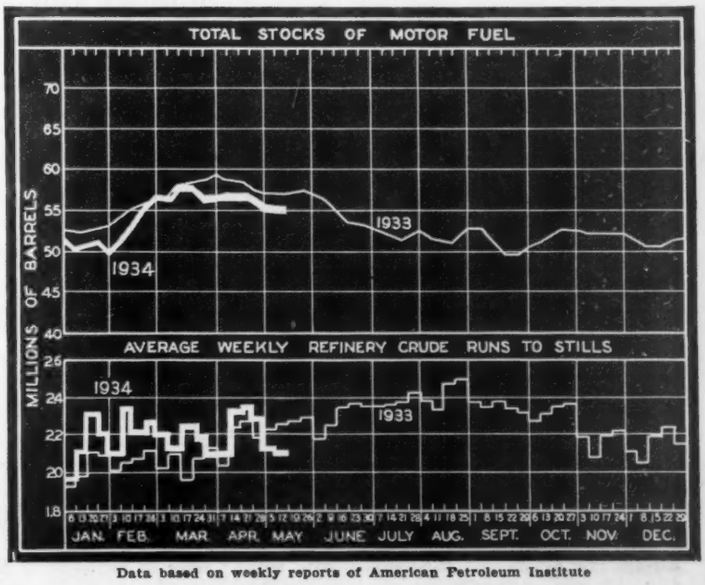
Note—Gasoline stocks 1933 and 1934 not directly comparable for in 1933 large volumes of unfinished and "other motor fuel" were included.

**Week Ending May 12, 1934, Compared to Week Ago**

| | Week Ending May 12, 1934 | | | | Week Ending May 5, 1934 | | | |
|---|---|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (1) | (2) | (3) | (4) |
| East Coast | 100.0 | 478,000 | 17,709,000 | 7,170,000 | 100.0 | 440,000 | 17,433,000 | 6,900,000 |
| Appalachian | 93.3 | 94,000 | 1,724,000 | 848,000 | 93.3 | 90,000 | 1,789,000 | 832,000 |
| Ind., Ill., Ky. | 94 6 | 295,000 | 9,065,000 | 2,804,000 | 94.6 | 293,000 | 9,358,000 | 2,747,000 |
| Okla., Kans., Mo. | 83.7 | 246,000 | 5,496,000 | 3,006,000 | 83.7 | 195,000 | 5,598,000 | 2,912,000 |
| Inland Texas | 47.6 | 96,000 | 1,372,000 | 1,756,000 | 47.6 | 82,000 | 1,357,000 | 1,757,000 |
| Texas Gulf | 97.5 | 471,000 | 4,507,000 | 5,120,000 | 97.5 | 487,000 | 4,709,000 | 4,838,000 |
| La. Gulf | 96.4 | 125,000 | 1,300,000 | 1,101,000 | 96.4 | 108,000 | 1,299,000 | 992,000 |
| N. La. and Ark. | 83.7 | 42,000 | 263,000 | 493,000 | 83.7 | 45,000 | 267,000 | 503,000 |
| Rocky Mtn. | 66.7 | 22,000 | 1,349,000 | 706,000 | 66.7 | 21,000 | 1,415,000 | 711,000 |
| California | 96.9 | 439,000 | 12,508,000 | 80,172,000 | 96.9 | 411,000 | 12,464,000 | 80,884,000 |
| Total U. S. | 89.7 | 2,308,000 | 55,293,000 | 103,176,000 | 89.7 | 2,172,000 | 55,689,000 | 103,076,000 |

**Week Ending May 12, 1934, Compared to Year Ago**

| | Week Ending May 12, 1934 | | | | Week ending May 13, 1933 | | | |
|---|---|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (1) | (2) | (3) | (4) |
| East Coast | 100.0 | 478,000 | 17,709,000 | 7,170,000 | 99.1 | 483,000 | 16,653,000 | 6,405,000 |
| Appalachian | 93.3 | 94,000 | 1,724,000 | 848,000 | 95.0 | 97,000 | 2,142,000 | 876,000 |
| Ind., Ill., Ky. | 94 6 | 295,000 | 9,065,000 | 2,804,000 | 97.5 | 310,000 | 8,543,000 | 3,689,000 |
| Okla., Kans., Mo. | 83.7 | 246,000 | 5,496,000 | 3,006,000 | 84 9 | 214,000 | 4,968,000 | 3,057,000 |
| Inland Texas | 47.6 | 96,000 | 1,372,000 | 1,756,000 | 56.4 | 92,000 | 1,591,000 | 2,134,000 |
| Texas Gulf | 97.5 | 471,000 | 4,507,000 | 5,120,000 | 97.7 | 448,000 | 5,696,000 | 6,035,000 |
| La. Gulf | 96.4 | 125,000 | 1,300,000 | 1,101,000 | 97.3 | 103,000 | 1,524,000 | 1,920,000 |
| N. La. and Ark. | 83.7 | 42,000 | 263,000 | 493,000 | 83.5 | 39,000 | 319,000 | 591,000 |
| Rocky Mtn. | 66.7 | 22,000 | 1,349,000 | 706,000 | 90 8 | 36,000 | 1,319,000 | 641,000 |
| California | 96.9 | 439,000 | 12,508,000 | 80,172,000 | 94.6 | 421,000 | 13,964,000 | 97,960,000 |
| Total U. S. | 89.7 | 2,308,000 | 55,293,000 | 103,176,000 | 91.6 | 2,243,000 | 56,719,000 | 123,308,000 |




Data based on weekly reports of American Petroleum Institute

# REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement except as otherwise noted

Quotations are exclusive of the Federal tax of 1 cent a gallon on gasoline and 4 cents on lubricating oils.

## Refinery Gasolines

| | May 15 | | May 8 | |
|---|---|---|---|---|
| **OKLAHOMA (Group 3)—** | | | | |
| U. S. Motor grades: | | | | |
| Below 60 octane | .04 | .04⅛ | .03⅞ | .04⅛ |
| 60-64.9 octane | .04½ | .04¾ | .04½ | .04¾ |
| 65-70 octane | .04¾ | .05 | .04¾ | .05 |
| 60-62 400 grades: | | | | |
| Below 60 octane | .04 | .04¼ | .04 | .04¼ |
| 60-64.9 octane | .04⅝ | .04⅞ | .04⅝ | .04⅞ |
| 65-70 octane | .04⅞ | .05 | .04⅞ | .05⅛ |
| 64-66 375 | .04¼ | .04⅜ | .04¼ | .04⅜ |
| 68-70 360 | .04¼ | .04½ | .04¼ | .04½ |
| **NORTH TEXAS—** | | | | |
| U. S. Motor grades: | | | | |
| Below 60 octane | .03⅞ | .04 | .03⅞ | .04 |
| 60-64.9 octane | .04½ | .04¾ | .04½ | .04¾ |
| 65-70 octane | .05 | .05⅛ | .05 | .05⅛ |
| 60-62 400 | .04 | .04¼ | .04 | .04¼ |
| 64-66 375 | .04⅛ | .04⅜ | .04¼ | .04⅜ |
| 68-70 360 | .04¼ | .04½ | .04¼ | .04½ |
| **NORTH LOUISIANA (Ark., N. La. & Miss. del.)—** | | | | |
| U. S. Motor grades: | | | | |
| Below 60 octane | .04½ | .04⅝ | .04⅜ | .04½ |
| 60-64.9 octane | .05⅛ | .05¼ | .05⅛ | .05¼ |
| 65-70 octane | .05⅜ | .05½ | .05⅜ | .05½ |
| 60-62 400 | .04½ | .04⅞ | .04⅞ | .04½ |
| **ARKANSAS (Ark., N. La. & Miss. del.)—** | | | | |
| U. S. Motor grades: | | | | |
| Below 60 octane | .04½ | .04⅝ | .04⅜ | .04½ |
| 60-64.9 octane | .05⅛ | .05¼ | .05⅛ | .05¼ |
| 65-70 octane | .05⅜ | .05½ | .05⅜ | .05½ |
| **CHICAGO (based on Oklahoma Group 3)—** | | | | |
| U. S. Motor grades: | | | | |
| Below 60 octane | .04 | .04¼ | .04 | .04⅛ |
| 60-64.9 octane | .04⅝ | .04⅞ | .04⅝ | .04¾ |
| 65-70 octane | .04⅞ | .05⅛ | .04⅞ | .05 |
| 60-62 400 | .04½ | .04¼ | .04 | .04¼ |
| 64-66 375 | .04¼ | .04⅜ | .04¼ | .04⅜ |
| 68-70 360 | .04⅜ | .04⅝ | .04⅜ | .04½ |
| Aviation fighting grade | .05 | .05¼ | .05 | .05¼ |
| **PENNSYLVANIA (inland refineries)—** | | | | |
| 58-60 U. S. Motor: | | | | |
| Below 60 octane | .05½ | .05¾ | .05⅜ | .05⅝ |
| 60-64.9 octane | .06¼ | .06⅜ | .06⅛ | .06⅜ |
| 65-70 octane | .06¾ | .06⅞ | .06⅝ | .06¾ |
| 68-70 350 | .06¼ | .06½ | .06¼ | .06½ |
| **CALIFORNIA (domestic movement)—** | | | | |
| 54-58 U. S. Motor | .04¼ | .05¼ | .04¼ | .05¼ |
| 58-60 400 | .05 | .06 | .05 | .06 |
| **EAST COAST—** | | | | |
| U. S. Motor, below 60 octane: | | | | |
| New York | .05¾ | .06 | .05½ | .05¾ |
| Baltimore | .05¾ | .06 | .05½ | .05¾ |
| U. S. Motor, 60-64 octane: | | | | |
| New York (Bayonne) | .06 | .06¼ | .05¾ | .06 |
| Philadelphia | .06¼ | .06½ | .06 | .06¼ |
| Boston | .06¼ | .06½ | .06 | .06¼ |
| Baltimore | .06 | | .05¾ | |
| Charleston, S. C. | .06 | | .05¾ | |
| U. S. Motor, 65 and above: | | | | |
| New York (Bayonne) | .06¼ | .06½ | .06 | .06¼ |
| Philadelphia | .06¼ | .06½ | .06¼ | .06½ |
| Boston | .06¼ | .06½ | .06¼ | .06½ |
| Baltimore | .06¼ | .06½ | .06 | .06¼ |
| Charleston, S. C. | .06¼ | .06½ | .06 | .06¼ |
| **GULF COAST (domestic)—** | | | | |
| U. S. Motor: | | | | |
| Below 60 octane | .05½ | .05¾ | .05½ | .05¾ |
| 60-64.9 octane | .05¾ | .06 | .05¾ | .06 |
| 65 octane and higher | .06 | .06¼ | .06 | .06¼ |

## Naphthas

| | May 15 | | May 8 | |
|---|---|---|---|---|
| **PENNSYLVANIA (inland refineries)—** | | | | |
| 50-54 430-450 (blending) | .05¼ | | .04⅞ | |
| **CHICAGO (based on Oklahoma Group 3)—** | | | | |
| 50-52 450 (blending) | .04¼ | .04½ | .04¼ | .04½ |
| Cleaners' naphtha, 56-58 gr., 200 i.b.p.-330 e.p. | .06¾ | .07 | .06¾ | .07 |
| Lacquer diluent, 180 i.b.p.-250 e.p. | .07¾ | .08 | .07¾ | .08 |
| Lacquer diluent, 140 i.b.p.-200 e.p. | .08¾ | .09 | .08¾ | .09 |
| Rubber solvent, 68-70 gr., 100 i.b.p.-330 e.p. | .06¾ | .07 | .06¾ | .07 |
| Stoddard solvent, 300 i.b.p.-410 e.p., over 83° flash | .06¼ | .06½ | .06¼ | .06⅝ |
| Pet. thinner, 290-300 i.b.p.-415 e.p., over 83° flash | .06¼ | .06½ | .06¼ | .06½ |
| V.M.&P. naphtha, 56-58 gr., 190-200 i.b.p.-330 e.p. | .06¾ | .07 | .06¾ | .07 |
| Petroleum spirits | .05¾ | .06 | .05¾ | .06 |

## Natural Gasolines

| | May 15 | | May 8 | |
|---|---|---|---|---|
| **OKLAHOMA (Group 3)—** | | | | |
| Grade 26-70 | .02⅛ | .02¼ | .02 | .02⅛ |
| Grade 18-55 | .02⅝ | .02¾ | .02⅝ | .02¾ |
| Low vapor pressure grades: | | | | |
| 15 lb. v.p. (max.) | .03 | .03⅛ | .02⅞ | .03 |
| 11 lb. v.p. (max.) | .03⅞ | .04 | .03¾ | .04 |
| **NORTH TEXAS—** | | | | |
| Grade 26-70 | .01⅞ | .02 | .01¾ | .01⅞ |
| Grade 18-55 | .02½ | .02⅝ | .02⅜ | .02⅝ |
| Low vapor pressure grades: | | | | |
| 15 lb. v.p. (max.) | .02⅞ | .03 | .02¾ | .02⅞ |
| 11 lb. v.p. (max.) | .03¾ | .03⅞ | .03½ | .03¾ |
| **NORTH LOUISIANA—** | | | | |
| Grade 26-70 | .02½ | .02⅝ | .02⅜ | .02½ |
| **CALIFORNIA—** | | | | |
| 75-78 375 | .04¾ | .05¼ | .04¾ | .05¼ |

## Kerosenes

(All kerosenes water white)

| | May 15 | | May 8 | |
|---|---|---|---|---|
| **OKLAHOMA (Group 3)—** | | | | |
| 41-43 | .03½ | .03⅝ | .03½ | .03⅝ |
| 42-44 | .03¾ | .03⅞ | .03¾ | .03⅞ |
| **NORTH TEXAS—** | | | | |
| 40-41 | .03⅜ | .03½ | .03⅜ | .03½ |
| 41-43 | .03½ | .03⅝ | .03½ | .03⅝ |
| **NORTH LOUISIANA (Ark., N. La. & Miss. del.)—** | | | | |
| 41-43 | .03¾ | | .03⅝ | |
| **ARKANSAS (Ark., N. La. & Miss. del.)—** | | | | |
| 41-43 | .03¾ | | .03⅝ | |
| **PENNSYLVANIA (inland refineries)—** | | | | |
| 45 | .04⅜ | .04⅝ | .04⅜ | .04⅝ |
| 46 | .04½ | .04⅞ | .04½ | .04⅞ |
| 47 | .04⅞ | .05⅛ | .04⅞ | .05⅛ |
| **CHICAGO (based on Oklahoma Group 3)—** | | | | |
| 41-43 | .03½ | .03¾ | .03⅝ | .03⅞ |
| 42-44 | .03¾ | .04 | .03⅞ | .04 |
| **CALIFORNIA (Pacific Coast consumption)—** | | | | |
| 38-40 high burning test | .04½ | .05 | .04½ | .05 |
| **NEW YORK (Bayonne, N. J.)—** | | | | |
| 41-43 | .05¼ | .05½ | .05¼ | .05½ |
| **GULF COAST (domestic)—** | | | | |
| 41-43 | .04⅝ | .04⅞ | .04¾ | .05 |

## Petroleum Coke

Prices per ton f.o.b. refineries in Chicago area. (Refineries will absorb freight to 80 cents a ton)

| | May 15 | | May 8 | |
|---|---|---|---|---|
| Breeze (screenings) | 5.00 | | 5.00 | |
| Pile run | 5.00 | | 5.00 | |
| Direct from still | 6.00 | | 6.00 | |
| Lump and egg | 7.00 | 8.00 | 7.00 | 8.00 |

## Furnace Oils and Tractor Fuels

(Zero cold test under 190° flash and good odor)

| | May 15 | | May 8 | |
|---|---|---|---|---|
| **OKLAHOMA (Group 3)—** | | | | |
| 32-36 straw | .02⅝ | .02¾ | .02⅝ | .02¾ |
| 36-38 straw | .02⅝ | .02¾ | .02⅝ | .02¾ |
| 38-40 straw | .02¾ | .02⅞ | .02¾ | .02⅞ |
| 39-41 prime white | .02⅞ | .03 | .02⅞ | .03 |
| **NORTH TEXAS—** | | | | |
| 38-40 straw | .02¾ | .03 | .02¾ | .03 |
| **NORTH LOUISIANA (Ark., N. La. & Miss. del.)—** | | | | |
| 36-40 furnace oil | .03 | | .03 | |
| **ARKANSAS (Ark., N. La. & Miss. del.)—** | | | | |
| 32-36 furnace oil | .02¾ | .02⅞ | .02¾ | .02⅞ |
| **CHICAGO (based on Oklahoma Group 3)—** | | | | |
| 32-36 straw | .02¾ | .03 | .02¾ | .03 |
| 38-40 straw | .02¾ | .03 | .02⅞ | .03 |
| 38-40 prime white | .03 | .03¼ | .03⅛ | .03¼ |
| **NEW YORK (Bayonne, N. J.)—** | | | | |
| 36-40 (No. 1 grade) | .05¼ | .05½ | .05¼ | .05½ |
| 32-36 (No. 2 grade) | .04½ | .04¾ | .04½ | .04¾ |
| 21 industrial (No. 4 grade) | .04 | .04¼ | .04 | .04¼ |

## Gas Oil, Diesel Oil and Fuel Oil

(Gas oil per gallon; Diesel and fuel oils per barrel)

| | May 15 | | May 8 | |
|---|---|---|---|---|
| **OKLAHOMA (Group 3)—** | | | | |
| 32-36 gas oil cracking stock | .02⅛ | .02⅜ | .02⅛ | .02⅜ |
| U.G.I. gas oil | .02¼ | .02¼ | .02 | .02¼ |
| 32-36, zero to 15 gas oil | .02½ | .02⅝ | .02½ | .02⅝ |
| 28-30, No. 3 burner oil | .95 | 1.00 | .95 | 1.00 |
| 28-30, zero to 10 fuel oil | .90 | .95 | .90 | .95 |
| 26-30, zero to 10 fuel oil | .85 | .95 | .85 | .95 |
| 24-26 fuel oil | .72½ | .75 | .70 | .75 |
| 20-22 fuel oil | .67½ | .70 | .65 | .70 |
| Below 16 fuel oil | .62½ | .65 | .60 | .65 |
| **NORTH TEXAS—** | | | | |
| 32-36 gas oil, industrial | .02 | | .02 | |
| 22-26 fuel oil | .65 | .67½ | .62½ | .67½ |
| Below 20 fuel oil | .55 | .60 | .52½ | .60 |
| **NORTH LOUISIANA (Ark., N. La. & Miss. del.)—** | | | | |
| 32-36 gas oil, zero | .02¾ | .03 | .02¾ | .03 |
| 14-16 fuel oil | .70 | .75 | .70 | .75 |
| **ARKANSAS (Ark., N. La. & Miss. del.)—** | | | | |
| 30-32 gas oil, zero | .02¾ | .03 | .02¾ | .03 |
| 32-36 gas oil | .02½ | .02¾ | .02½ | .02¾ |
| 14-16 fuel oil | .70 | .75 | .70 | .75 |
| **CHICAGO (based on Oklahoma Group 3)—** | | | | |
| 32-36 gas oil, industrial | .02¼ | .02⅜ | .02½ | .02¼ |
| 28-30 zero to 10, fuel oil | .95 | 1.00 | .92½ | 1.00 |
| 26-28 zero to 10, fuel oil | .85 | .90 | .85 | .90 |
| 22-26 zero to 10, fuel oil | .75 | .80 | .75 | .80 |
| 18-22 zero to 10, fuel oil | .65 | .67½ | .62½ | .67½ |
| Below 18 fuel oil | .55 | .57½ | .52½ | .57½ |

Note: Fuel oils of more than 40 cold test generally 5 to 15 cents per barrel less in all these areas.

| | | | | |
|---|---|---|---|---|
| **PENNSYLVANIA (inland refineries)—** | | | | |
| 36-40 | .04 | .04⅛ | .03⅞ | .04 |
| **CALIFORNIA—** | | | | |
| 30-34 gas oil per bbl. | 1.00 | 1.10 | 1.00 | 1.10 |
| 27 plus Diesel | 1.00 | 1.10 | 1.00 | 1.10 |
| 15-19 bunker (at tidewater) | .60 | .70 | .60 | .70 |
| 15-19 (cargo lots) | .55 | .60 | .55 | .60 |
| 15-19 (tank cars) | .50 | .65 | .50 | .65 |
| **GULF COAST—** | | | | |
| 28-30 gas oil | .03½ | .03¾ | .03½ | .03¾ |
| 28-30 Diesel (bunkers) | 1.80 | | 1.80 | |
| Bunker C (bulk cargoes) | .95 | 1.00 | .95 | 1.00 |
| Bunker C (bunkers) | 1.15 | | 1.15 | |
| **NEW YORK (Bayonne, N. J.)—** | | | | |
| 28 plus, gas oil | .04¼ | .04½ | .04¼ | .04½ |
| 28-30 Diesel (lighterage 6½ cents per bbl.) | 1.95 | | 1.95 | |
| 28-30 Diesel (tank cars) | .04½ | | .04½ | |
| *Bunker C (to ocean-going ships in N. Y. harbor) | 1.30 | | 1.30 | |

*Lighterage charge 5 cents per barrel additional.

## Neutral Oils

(Vis. at 100° F. except Pennsylvania, and color N.P.A.)

| | May 15 | | May 8 | |
|---|---|---|---|---|
| **OKLAHOMA (Group 3)—** | | | | |
| Zero to 10 Cold Test: | | | | |
| 150-3 | .09½ | | .08¾ | |
| 180-3 | .10¾ | | .10 | |
| 180-4 | .10¼ | | .09½ | |
| 200-3 | .11¼ | | .10½ | |
| 200-4 | .10¾ | | .10 | |
| 240-3 | .13¼ | | .12½ | |
| 240-4 | .12¾ | | .12 | |
| 280-3 | .14¼ | | .13½ | |
| 280-4 | .13½ | | .12¾ | |
| 300-3½ | .14¾ | | .14 | |
| 400-4 | .16¾ | | .16 | |
| 100-2 paraffin oil | .06½ | | .06½ | |
| 15-30 Cold Test: | | | | |
| 200-3 | .10¼ | | .09½ | |
| 200-4 | .09¾ | | .09 | |
| 240-3 | .12¼ | | .11½ | |
| 240-4 | .11¾ | | .11 | |
| 280-3 | .13¼ | | .12½ | |
| 280-4 | .12½ | | .11¾ | |
| **GULF COAST—** | | | | |
| Pale Oils: | | | | |
| 200-3 | .07½ | | .07½ | |
| 300-3 | .08 | .08¼ | .08 | .08¼ |
| 500-3½ | .09 | .09¼ | .09 | .09¼ |
| 750-3½ | .09½ | .09¾ | .09½ | .09¾ |
| 1,200-3½ | .10 | .10¼ | .10 | .10¼ |
| 2,000-4 | .10¼ | .10½ | .10¼ | .10½ |
| Red Oils: | | | | |
| 200-5-6 | .06½ | | .06½ | |
| 300-5-6 | .07 | .07¼ | .07 | .07¼ |
| 500-5-6 | .08 | .08¼ | .08 | .08¼ |
| 750 | .08½ | .08¾ | .08½ | .08¾ |
| 1,200-5-6 | .09 | .09¼ | .09 | .09¼ |
| 2,000-6½ plus | .09¼ | .09½ | .09¼ | .09½ |
| **CALIFORNIA—** | | | | |
| Pale Oils: | | | | |
| 100-2¼-3 | .23 | .25 | .23 | .25 |
| 200-2½-3 | .23 | .25 | .23 | .25 |
| 300-3-3½ | .23 | .25 | .23 | .25 |
| 350-3-4 | .23 | .25 | .23 | .25 |
| 400-3-4 | .23 | .25 | .23 | .25 |
| 450-3-4 | .23 | .25 | .23 | .25 |
| 550-3-4 | .23 | .25 | .23 | .25 |
| 600-3-4 | .23 | .25 | .23 | .25 |
| Red Oils: | | | | |
| 200-4-5 | .23 | .25 | .23 | .25 |
| 300-5-6 | .23 | .25 | .23 | .25 |
| 350-5-6 | .23 | .25 | .23 | .25 |

| | | | | |
|---|---|---|---|---|
| 400-5-6 | .23 | .25 | .23 | .25 |
| 450-5-6 | .23 | .25 | .23 | .25 |
| 500-5-6 | .23 | .25 | .23 | .25 |
| 600-5-6½ | .23 | .25 | 23. | .25 |
| 700-6½ plus | .23 | .25 | .23 | .25 |
| 750-6½ plus | .23 | .25 | .23 | .25 |
| 900-6½ plus | .23 | .25 | .23 | .25 |
| PENNSYLVANIA— | | | | |
| 150 vis. at 70° F., 3 color; 400-405 flash: | | | | |
| Zero pour test | .25½ | .26 | .25½ | .26 |
| 10 pour test | .24½ | .25 | .24½ | .25 |
| 15 pour test | .24 | .24½ | .24 | .24½ |
| 25 pour test | .23 | .23½ | .23 | .23½ |
| 180 vis. at 70° F., 3 color: | | | | |
| 25 pour test | .27 | .27½ | .27 | .27½ |
| 200 vis. at 70° F., 3 color: | | | | |
| Zero pour test | .32 | .33½ | .32 | .33½ |
| 10 pour test | .30½ | .32 | .30½ | .32 |
| 15 pour test | .30 | .30½ | .30 | .30½ |
| 25 pour test | .29½ | .30 | .29½ | .30 |

## Bright and Steam Refined Stocks

| OKLAHOMA (Group 3)— | May 15 | | May 8 | |
|---|---|---|---|---|
| Bright Stocks: | | | | |
| 190-200 D | .27¼ | | 27¼ | |
| 150-160 D, 0-10 | .24½ | | .24½ | |
| 150-160 D, 10-25 | .24 | | .24 | |
| 150-160 25-40 | .23½ | | .23½ | |
| 150-160 E | .23½ | | .23½ | |
| Steam refined: | | | | |
| 630 light green (treated) | .15½ | | .15½ | |
| 800 light green (untreated) | .07½ | .09 | .07½ | .09 |
| 600 dark green (untreated) | .05½ | .08 | .05½ | .08 |
| PENNSYLVANIA— | | | | |
| Steam refined: | | | | |
| 600 | .19½ | .20 | .19½ | .20 |
| 650 | .22 | .22½ | .22 | .22½ |
| 600 Pennsylvania flash | .23 | .23½ | .23 | .23½ |
| 630 flash | .27½ | .28 | .27½ | .28 |
| 600 Warren E filtered | .22½ | .23 | .22½ | .23 |
| Bright Stocks (Pennsylvania grade, No. 8 color, 145-50 at 210; 540-550 flash): | | | | |
| 10 pour test | .30 | .30½ | .30 | .30½ |
| 15 pour test | .29 | .29½ | .29 | .29½ |
| 25 pour test | .28½ | .29 | .28½ | .29 |

## Wax and Petrolatum

(Prices per pound)

| OKLAHOMA (Group 3)— | May 15 | | May 8 | |
|---|---|---|---|---|
| 124-126 white crude scale | .03⅝ | .03¾ | .03⅝ | .03¾ |
| PENNSYLVANIA— | | | | |
| 122-124 | .0375 | | .0380 | |
| 124-126 | .0380 | | .0385 | |
| NEW YORK HARBOR— | | | | |
| Wax (a.m.p.) in bags fully refined: | | | | |
| 120-122 | .0420 | .0430 | .0420 | .0430 |
| 123-125 | .0435 | .0460 | .0435 | .0460 |
| 125-127 | .0445 | .0470 | .0445 | .0470 |
| 128-130 | .0480 | .0495 | .0480 | .0495 |
| 130-132 | .05 | .0510 | .05 | .0510 |
| 133-135 | .0545 | .0570 | .0545 | .0570 |
| 135-137 | .0570 | .0595 | .0570 | .0595 |
| 124-126 crude scale | .03½ | .03¾ | .03½ | .03¾ |
| Petrolatum in barrels in carload lots: | | | | |
| Dark green | .01⅞ | .02 | .01⅞ | .02 |
| Amber | .02⅞ | .03 | .02⅞ | .03 |
| Extra amber | .03½ | .03¼ | .03½ | .03¼ |
| Lily white | .06¾ | .06⅞ | .06¾ | .06⅞ |
| Snow white | .07¾ | .07⅞ | .07¾ | .07⅞ |
| Cream | .05⅝ | .05¾ | .05⅝ | .05¾ |
| CHICAGO (f.o.b. switching district)*— | | | | |
| 122-124 wax | .0465 | .0475 | .0465 | .0475 |
| 125-127 wax | .0490 | .0500 | .0490 | .0500 |
| 127-129 wax | .0505 | .0515 | .0505 | .0515 |
| 130-132 wax | .0565 | .0575 | .0565 | .0575 |
| 132-134 wax | .0590 | .0600 | .0590 | .0600 |

*Cents per pound on carlot orders in burlap bags of 225 lbs. approx. Add 3° F. a.m.p.

## Export Prices

GASOLINE

| GULF COAST— | May 15 | May 8 |
|---|---|---|
| U. S. Motor | .04¼ | .04¼ |

| | | | | |
|---|---|---|---|---|
| 60-62 400 | .04⅜ | | .04⅜ | |
| 61-63 390 | .04⅜ | .04½ | .04⅜ | .04½ |
| 64-66 375 | .04⅝ | .04¾ | .04⅝ | .04¾ |
| LOS ANGELES, CALIF.— | | | | |
| U. S. Motor grades: | | | | |
| 53-55 octane | .04 | .04¼ | .04 | .04¼ |
| 55-65 octane | .04¼ | .04½ | .04¼ | .04½ |
| 65-67 octane | .04½ | .04¾ | .04½ | .04¾ |
| 67-69 octane | .04¾ | .05 | .04¾ | .05 |
| Above 69 octane | .05 | .05¼ | .05 | .05¼ |
| 58-60 400 endpoint | .04¾ | .05½ | .04¾ | .05½ |

### KEROSENE

| | | | | |
|---|---|---|---|---|
| GULF COAST— | | | | |
| 41-43 prime white | .04¼ | .04¼ | .04¼ | .04⅜ |
| 41-43 water white | .04¼ | .04⅜ | .04⅜ | .04½ |
| 44 water white | .04⅜ | .04½ | .04½ | .04⅝ |
| LOS ANGELES, CALIF.— | | | | |
| 41-43 water white | .04¼ | .04¼ | .04¼ | .04¾ |

### LUBRICANTS

| | | | | |
|---|---|---|---|---|
| NEW YORK (f.a.s. in bbls.)— | | | | |
| Cylinder Stocks: | | | | |
| 600 Warren E | .28 | .29 | .28 | .29 |
| 600 S.R. unfiltered | .26 | .26½ | .26 | .26½ |
| 650 S.R. unfiltered | .28 | .28½ | .28 | .28½ |
| 600 flash S.R. | .29 | .29½ | .29 | .29½ |
| 630 flash S.R. | .33 | .33½ | .33 | .33½ |
| Bright Stocks: | | | | |
| 8 color | .36 | .38 | .35 | .37 |
| 6½ plus color, in dilution | .35 | .36 | .34 | .35 |

### NEUTRAL OILS

| | | | | |
|---|---|---|---|---|
| 200-3 color | .37 | .38 | .36 | .37 |
| 150-3 color | .32 | .33 | .31 | .32 |

### PARAFFIN WAX (Fully Refined)

| NEW YORK (prices per pound)— | | | | |
|---|---|---|---|---|
| 120-122 a.m.p. | .0405 | .04¼ | .0405 | .04¼ |
| 123-125 a.m.p. | .0430 | .0455 | .0430 | .0455 |
| 125-127 a.m.p. | .0440 | .0465 | .0440 | .0465 |
| 128-130 a.m.p. | .04¾ | .0490 | .04¾ | .0490 |
| 130-132 a.m.p. | .0495 | .0505 | .0495 | .0505 |
| 133-135 a.m.p. | .0540 | .0565 | .0540 | .0565 |
| 135-137 a.m.p. | .0565 | .0590 | .0565 | .0590 |

# Crude Oil Gravity Table

| Degrees gravity— | Oklahoma and Kansas 1 | North Texas, Central Texas and East Central Texas 2 | North Louisiana and Arkansas 3 | Gray County, Texas 4 | Carson, Hutchinson, and Moore Counties, Texas 5 | Conroe, Texas 6 | Salt Creek, Wyo 7 | Gulf Coast, Texas, and Louisiana 8 | Gulf Coast, Texas, and Louisiana 9 | Cotton Valley, Louisiana 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| Below 20 | .... | .... | .... | .... | .... | .... | .... | $.82 | $.82 | .... |
| 20-20.9 | .... | .... | .... | .... | .... | .... | .... | .84 | .84 | .... |
| 21-21.9 | .... | .... | .... | .... | .... | .... | .... | .86 | .86 | .... |
| 22-22.9 | .... | .... | .... | .... | .... | .... | .... | .88 | .88 | .... |
| 23-23.9 | .... | .... | .... | .... | .... | .... | .... | .90 | .90 | .... |
| 24-24.9 | .... | .... | .... | .... | .... | .... | .... | .92 | .92 | .... |
| Below 25 | *$.76 | .... | .... | .... | .... | .... | .... | .... | .... | $.70 |
| 25-25.9 | *.78 | .... | .... | .... | .... | .... | .... | .94 | .94 | .72 |
| 26-26.9 | *.80 | .... | .... | .... | .... | .... | .... | .96 | .96 | .74 |
| 27-27.9 | *.82 | .... | .... | .... | .... | .... | .... | .98 | .98 | .76 |
| 28-28.9 | *.84 | .... | .... | .... | .... | .... | .... | 1.00 | 1.00 | .78 |
| Below 29 | .84 | $.79 | $.79 | .... | .... | .... | $.84 | .... | .... | .... |
| 29-29.9 | .86 | .81 | .81 | .... | .... | .... | .86 | 1.02 | 1.02 | .80 |
| 30-30.9 | .88 | .83 | .83 | .... | .... | .... | .88 | 1.04 | 1.04 | .82 |
| 31-31.9 | .90 | .85 | .85 | .... | .... | .... | .90 | 1.06 | 1.05 | .84 |
| 32-32.9 | *.92 | .87 | .87 | .... | .... | .... | .92 | 1.08 | 1.06 | .86 |
| 33-33.9 | .94 | .89 | .89 | .... | .... | .... | .94 | 1.10 | 1.07 | .88 |
| 34-34.9 | .96 | .91 | .91 | .... | .... | .... | .96 | 1.12 | 1.08 | .90 |
| Below 35 | .... | .... | .... | $.79 | $.89 | .... | .... | .... | .... | .... |
| 35-35.9 | .98 | .93 | .93 | .81 | .71 | $1.09 | .98 | 1.12 | 1.09 | .92 |
| 36-36.9 | 1.00 | .95 | .95 | .83 | .73 | 1.11 | 1.00 | 1.12 | 1.10 | .94 |
| 37-37.9 | 1.02 | .97 | .97 | .85 | .75 | 1.13 | 1.02 | 1.12 | 1 11 | .96 |
| 38-38.9 | 1 04 | .99 | .99 | .87 | .77 | 1.15 | 1.04 | 1.12 | 1.12 | .98 |
| 39-39.9 | 1.06 | 1.01 | 1.01 | .89 | .79 | 1.17 | 1.06 | 1.12 | 1.13 | 1.00 |
| 40 and over | 1.08 | 1.03 | 1.03 | .91 | .81 | 1.19 | 1.08 | 1.13 | 1.14 | 1.02 |

*The following companies purchasing crude oil in Kansas or Oklahoma, or both, begin their price schedules: Below 25 degrees, 76 cents; 25-25.9 degrees, 78 cents, with 2 cents added for each degree upward to 40 and over at $1.08: Carter Oil Co., Magnolia Petroleum Co., Pure Oil Co., Rock Island Refining Co., Shell Petroleum Corp., Sinclair Prairie Oil Marketing Co., Skelly Oil Co., and Wilcox Oil & Gas Co. All others begin their schedule at below 26 degrees, 84 cents, excepting Phiitex Oil Co., which begins with below 31 degrees at 88 cents.

Column 1—Effective September 29, Texas Co. in Oklahoma; Stanolind Crude Oil Purchasing Co. in Kansas and Oklahoma; Anderson & Prichard, Inc., in Oklahoma; Bell Oil & Gas Co. in Oklahoma; Carter Oil Co. in Oklahoma and Kansas; Deep Rock Oil Co. in Oklahoma; Derby Oil Co. in Kansas; Globe Refining Co. in Oklahoma; Golden Rule Refining Co. in Kansas; Gypsy Oil Co. in Oklahoma and Kansas; Kanotex Refining Co. in Kansas; Magnolia Petroleum Co. in Oklahoma; Mid-Continent Petroleum Corp. in Oklahoma; National Refining Co. in Kansas and Oklahoma; Shell Petroleum Corp. in Kansas and Oklahoma; Sinclair Prairie Oil Marketing Co. in Kansas and Oklahoma; Texas Co. in Oklahoma; Tide Water Oil Co. in Oklahoma; Vickers Refining Co. in Kansas; Continental Oil Co. in Kansas and Oklahoma; Empire Pipe Line Co. in Oklahoma and Kansas; Phiitex Oil Co. in Kansas and Oklahoma; Pure Oil Co. in Oklahoma; Skelly Oil Co. in Kansas. Effective September 29, by White Eagle Oil Corp. in Kansas; on October 1 by Barnsdall Refineries, Inc., in Oklahoma.

Column 2—Effective September 29, by Texas Co., Stanolind Crude Oil Purchasing Co., Humble Oil & Refining Co., Sinclair Prairie Oil Marketing Co., Gulf Pipe Line Co., Magnolia Petroleum Co., Bell Oil & Gas Co., Continental Oil Co. Effective September 29, in the Van Pool, Van Zandt County, Pure Oil Co. posted below 29 degrees, 84 cents, with 2 cents added for each degree up to 40 and over at $1.08.

Column 3—Effective September 29, by Texas Co., Magnolia Petroleum Co., Gulf Refining Co. Effective December 22, Stanolind Oil & Gas Co. in Pine Island, Louisiana, and Marion County, Texas, posted below 29 degrees, 79 cents, with 2 cents added for each degree up to 40 and over at $1.03. Effective March 17, 1934, by Standard Oil Co. of Louisiana and Louisiana Oil Refining Co. Starting with below 25 degrees, 71 cents, adding 2 cents for each degree upward to 40 and over at $1.03.

Column 4—Effective September 29, by Texas Co., Humble Oil & Refining Co., Magnolia Petroleum Co., Sinclair Prairie Oil Marketing Co., and H. F. Wilcox Oil & Gas Co. On same day Phiitex Oil Co. posted below 31 degrees, 71 cents, with 2 cents added for each degree up to 40 and over at 91 cents.

Column 5—Effective September 29, by Texas Co., Humble Oil & Refining Co., Gulf Pipe Line Co., Magnolia Petroleum Co., Wilcox Oil & Gas Co., Continental Oil Co. On same day, Phiitex Oil Co. posted below 31 degrees, 61 cents, with 2 cents added for each degree upward to 40 and over at 81 cents.

Column 6—Effective September 29, by Humble Oil & Refining Co. and Tide Water Oil Co., and on September 30, by Texas Co. which on September 29 had posted a schedule of $1.07 to $1.13 with a 1-cent spread on each degree.

Column 7—Effective September 29 by Stanolind Oil & Gas Co.

Column 8—Effective September 29, by Humble Oil & Refining Co., Gulf Pipe Line Co., Shell Petroleum Corp., Pure Oil Co., Sinclair Prairie Oil Marketing Co. On October 2, Magnolia Petroleum Co. posted Lockport, Louisiana: 20-20.9 degrees, 84 cents, with 2 cents added for each degree upward to 34 and over at $1.12, and in Cameron Meadows and Iowa, Louisiana: Below 20 degrees, 72 cents with 2 cents added for each degree up to 34 and over at $1.02. These prices were 2 cents higher on each degree than Magnolia prices posted on September 29. Effective September 29, Shell Petroleum Corp. posted in Iowa, Louisiana, district: Below 20 degrees, 70 cents, with 2 cents added for each degree upward to 34 degrees and over at $1; and in Black Bayou and White Castle, Louisiana: Below 20 degrees, 80 cents, with 2 cents added for each degree upward to 34 degrees and over at $1.10.

Column 9—Effective September 30, Texas Co. (On September 29, Texas Co. had posted a schedule 2 cents lower on each degree, but changed it on September 30.)

Column 10—Effective September 29, by Louisiana Oil Refining Co.

## Crude Oil Prices

### Oklahoma, Kansas, North Central and East Central Texas

| | |
|---|---|
| East Texas | $1.00 |
| Stratman, Kans. (Sept. 29, 1933) | 1.08 |
| Corsicana (heavy) (June 17, 1933)* | .36 |
| Other fields | (See gravity table) |

Note—In East Texas, effective September 29, 1933, by Texas Co., Stanolind Crude Oil Purchasing Co., Humble Oil & Refining Co., Shell Petroleum Corp., Gulf Pipe Line Co., Tide Water Oil Co., Sinclair Prairie Oil Marketing Co., Magnolia Petroleum Co., Sun Oil Co., Panola Pipe Line Co., and Empire Oil & Refining Co.
*Magnolia Petroleum Co.

### West Texas

| | |
|---|---|
| Crane, Upton, Crockett, Howard, Glasscock, Mitchell (Sept. 29, 1933) | $ .70 |
| Ector, Winkler and Pecos Counties and Lea County, New Mexico (Sept. 29, 1933) | .75 |
| Pecos County, Yates shallow pool (Sept. 29, 1933)* | .65 |
| Jones and Fisher Counties. | See gravity table. |

Note — Effective September 29, 1933, by Humble Oil & Refining Co., Texas Co., Gulf Pipe Line Co., Shell Petroleum Corp., Magnolia Petroleum Co., and by Stanolind Oil & Gas Co. in Winkler County, Texas.
*Shell Petroleum Corp.

### Gulf Coast

| | |
|---|---|
| Grade A and Grade B specifications discontinued by leading buyers | (See gravity table) |
| Tomball (see note)* | $1.15 |
| Livingston (Sept. 29, 1933)† | 1.00 |
| Cleveland (Jan. 11, 1934) | 1.00 |
| Greta (Sept. 29, 1933) | .85 |
| Refugio, light | (See gravity table) |
| Refugio, heavy (Sept. 29, 1933)‡ | .85 |
| Markham and High Island | (See Gulf Coast gravity table) |
| Conroe | (See Conroe gravity table) |

Note—Tomball, effective September 29, by Humble Oil & Refining Co., and October 2 by Magnolia Petroleum Co., and November 10 by Stanolind Oil & Gas Co.
*Greta posted by Texas Co. †Shell Petroleum Corp. ‡Refugio heavy, by Humble Oil & Refining Co. Cleveland (Liberty County), posted by Magnolia Petroleum Co.

### South Central and Southwest Texas

(See note below table)

| | |
|---|---|
| Darst Creek | $.87 |
| Mirando | .80 |
| Luling (Sept. 29, 1933) | .75 |
| Pettus | 1.05 |
| Salt Flat | .87 |
| Lytton Springs (Sept. 29, 1933) | .95 |
| Duval County (Sept. 29, 1933) | .80 |
| Saxet | .85 |

Note—Effective on September 29 by Humble Oil & Refining Co., in Darst Creek, Mirando, Pettus, Salt Flat and Saxet. Effective September 29 in Darst Creek by Gulf Pipe Line Co. and Texas Co. Effective October 2 by Magnolia Petroleum Co. Effective in Pettus and Salt Flat on September 29 by Humble Oil & Refining Co. and Gulf Pipe Line Co. Luling and Lytton Springs by Magnolia Petroleum Co. Duval County by Texas Co. Saxet, effective September 29, by Humble Oil & Refining Co. and Texas Co.

(Continued on Page 47)

# TANK WAGON MARKETS

Quotations for gasoline and kerosene in United States, as furnished by the larger marketing concerns, include taxes

May 15, 1934

### Taxes

The gasoline quotations given in the following tables include the 1 cent Federal tax, as well as state, county and city taxes. The gasoline quoted is the regular or standard grade. In most marketing areas a third grade and a premium grade are also available.

### Discounts

Under the standard form of commercial consumer contract which went into effect March 1, 1934, save in California, Oregon, Washington, Arizona and Nevada, a discount of 1 cent a gallon off tank wagon, or 3 cents a gallon off retail prices, is permitted for purchases running between 3,000 and 10,000 gallons a month, and 2 cents a gallon off tank wagon, or 4 cents a gallon off retail prices, for purchases in lots of more than 10,000 gallons a month. The minimum delivery is 25 gallons.

### Rocky Mountain District

CONTINENTAL OIL CO.

| | Gasoline: Tank wagon | Gasoline: Service station | Gasoline: Incl'ds tax of | Kero. tank wagon |
|---|---|---|---|---|
| Denver, Colo. | 15.0 | 17.0 | 6.0 | 10.0 |
| Pueblo | 16.0 | 18.0 | 6.0 | 13 0 |
| Grand Junction | 21.5 | 23.5 | 6 0 | 15 0 |
| Casper, Wyo. | 18 0 | 20.0 | 5 0 | 11.5 |
| Cheyenne | 18.0 | 20.0 | 5.0 | 13 0 |
| Butte, Mont. | 21.0 | 23 0 | 5.0 | 17.5 |
| Billings | 21.0 | 23.0 | 6.0 | 16.5 |
| Helena | 22 5 | 24.5 | 6 0 | 17.5 |
| Great Falls | 21.5 | 23.5 | 6.0 | 17.5 |
| Salt Lake, Utah | 21 0 | 23.0 | 5.0 | 16.0 |
| Boise, Idaho | 22 0 | 24 0 | 6 0 | 18 0 |
| Twin Falls | 22.0 | 24.0 | 6.0 | 18.0 |
| Albu'que, N. M. | 19.5 | 21.5 | *7.0 | 13.0 |

*One-cent city tax.

Effective March 1, 1934, discount to dealers with or without contract throughout Continental territory: Undivided dealer discount off service station price, 4 cents; divided dealer accounts, 3½ cents.

### Standard Oil Co. (Indiana)

| | Gasoline: Tank wagon | Gasoline: Service station | Gasoline: Incl'ds tax of | Kero. tank wagon |
|---|---|---|---|---|
| Chicago | 13.8 | 15 8 | 4.0 | 9.7 |
| Decatur, Ill. | 16.7 | 18.7 | 4.0 | 10.2 |
| E. St. Louis | 16 0 | 18.0 | 4.0 | 9.5 |
| Joliet | 16.7 | 18.7 | 4.0 | 10.2 |
| Peoria | 15.2 | 17.2 | 4.0 | 10.2 |
| Quincy | 16.6 | 18.6 | 4.0 | 10.0 |
| Davenport, Ia. | 16.6 | 17 5 | 4.0 | 10.1 |
| Des Moines | 13.9 | 13.9 | 4.0 | 10.1 |
| Mason City | 16 8 | 17.6 | 4.0 | 9.3 |
| Sioux City | 12 9 | 12.9 | 4.0 | 9.7 |
| Duluth, Minn. | 17.2 | 19.2 | 4.0 | 10.4 |
| Mankato | 16.8 | 18 8 | 4 0 | 10 3 |
| Minneapolis | 15.4 | 17.4 | 4 0 | 10 4 |
| LaCrosse, Wis. | 18.3 | 20.3 | 4.3 | 10.8 |
| Green Bay | 17.7 | 19.7 | 5 0 | 10.2 |
| Milwaukee | 17.1 | 17.1 | 5.0 | 9.7 |
| Madison | 17.4 | 19.4 | 5.0 | 9.9 |
| Detroit, Mich. | 17 0 | 19.0 | 4.0 | 10 5 |
| Grand Rapids | 16.7 | 18.7 | 4.0 | 10.2 |
| Saginaw | 17.0 | 19.0 | 4.0 | 10 5 |
| Evansville, Ind. | 18.2 | 19.7 | 5.0 | 10.0 |
| Indianapolis | 17.9 | 19 9 | 5.0 | 10.2 |
| South Bend | 18.2 | 20.2 | 5.0 | 10 5 |
| Fargo, N. Dak. | 17.9 | 19.9 | 4.0 | 12 1 |
| Huron, S. Dak. | 18.8 | 20.8 | 5.0 | 11.4 |
| Sioux Falls | 18.4 | 20.4 | 5.0 | 10.9 |
| K. C., Mo.* | 15.7 | 17.7 | 4.0 | 9 2 |
| Springfield | 16.1 | 17.1 | 3.5 | 9.1 |
| St. Louis | 12 5 | 14 5 | 3.5 | 8 7 |
| St. Joseph* | 15 3 | 17 3 | 4 0 | 8.8 |
| Wichita, Kans. | 14.6 | 16.6 | 4.0 | 10.2 |
| Bartlesville, Okla. | 16.0 | 18.5 | 5.0 | 10 5 |

*State tax 2 cents, 1-cent city tax and 1-cent Federal tax.

Discounts to dealers, effective March 1, 1934: Undivided accounts, 4 cents a gallon on Red Crown Ethyl and Standard Red Crown, divided accounts, 3½ cents a gallon on Red Crown Ethyl and Standard Red Crown.

### Stanolex Furnace Oil in Chicago

Effective March 5, 1934, prices f.o.b. Chicago, tank wagon prices: No. 1 (36-40 lt. stw. zero), under 100 gallons, 8¼ cents; No. 2 (30-34 stw. zero), 7¾ cents; No. 3 (22-26 zero), 7¼ cents; No. 4 under 300 gallons (12-16 zero), 5¾ cents; viscosity of No. 4, 90-115 at 100° F.; No. 5 under 300 gallons, 5½ cents; for deliveries of 100 gallons or more deduct 1 cent.

### Naphtha

| | Tank wagon* |
|---|---|
| Oleum spirits | 16 9 |
| V.M.&P. naphtha | 18.0 |
| Cleaners' naphtha | 18.0 |
| Stanisol | 18.0 |

*Prices include 3-cent Illinois tax, but not 1-cent Federal tax.

Prices f.o.b. Chicago, September 13, 1933.

Each of above prices subject to discount of 1 cent per gallon for 150-gallon lots if covered by contracts.

### Southern District

STANDARD OIL CO. (KENTUCKY)

| | Gasoline: Tank wagon | Gasoline: Service station | Gasoline: Incl'ds tax of | Kero. tank wagon |
|---|---|---|---|---|
| Atlanta, Ga. | 20 0 | 22 0 | 7.0 | 14 5 |
| Augusta | 20 0 | 22 0 | 7.0 | 14.5 |
| Macon | 20.0 | 22.0 | 7.0 | 14.5 |
| Savannah | 20.0 | 22 0 | 7.0 | 14 0 |
| Birm'ham, Ala. | 21.5 | 22 5 | 8 0 | 12.0 |
| Mobile | 20 5 | 22.5 | 8 0 | 12.0 |
| Montgomery | 22 5 | 24 5 | 8 0 | 15.0 |
| Jackson, Miss. | 19.5 | 21.5 | 7.0 | 14.0 |
| Vicksburg | 20.0 | 22.0 | 7 0 | 14.0 |
| Jack'ville, Fla. | 20.0 | 22.0 | 8 0 | 11 5 |
| Miami | 20.0 | 22 0 | 8 0 | 13.5 |
| Pensacola | 18.0 | 20.0 | 8.0 | 13 5 |
| Tampa | 20.0 | 22.0 | 8 0 | 12 5 |
| Lexington, Ky. | 18.5 | 20.5 | 6 0 | 13.5 |
| Covington | 17 5 | 19 5 | 6.0 | 11 5 |
| Louisville | 18.0 | 20.0 | 6 0 | 11 5 |
| Paducah | 14.5 | 16.5 | 6.0 | 11.0 |

In addition to the state tax of 4 cents on gasoline, Montgomery has city and county tax of 2 cents on gasoline and one-half cent on kerosene. Kerosene prices in Georgia and Mississippi include 1 cent state tax; in Alabama, an inspection fee of one-half cent on kerosene and one-fortieth cent on gasoline; in Florida an inspection fee of one-eighth cent on kerosene and gasoline. To Pensacola, Mobile and Birmingham state taxes on gasoline add 1 cent city tax.

### Southwestern District

MAGNOLIA PETROLEUM CO.

| | Gasoline: Tank wagon | Gasoline: Service station | Gasoline: Incl'ds tax of | Kero. tank wagon |
|---|---|---|---|---|
| Dallas, Tex. | 17 0 | 19 0 | 5.0 | 6 0 |
| Fort Worth | 17.0 | 19 0 | 5 0 | 7.0 |
| Houston | 16 0 | 18.0 | 5.0 | 8.5 |
| San Antonio | 17.0 | 19.0 | 5.0 | 8.5 |
| El Paso | 17.5 | 19.5 | 5.0 | 11.0 |
| Muskogee, Ok. | 16 0 | 18 0 | 5 0 | 7.5 |
| Okla. City | 16 0 | 18.0 | 5.0 | 8.5 |
| Tulsa | 16.0 | 18.0 | 5.0 | 8.5 |
| Ft. Smith, Ark. | 15.5 | 17.5 | 5.0 | 8.0 |
| Little Rock | 17.5 | 19.5 | 7.5 | 9.4 |
| Texarkana | 17.0 | 19.0 | 5.0 | 7.0 |

### Atlantic Coast District

STANDARD OIL CO. OF NEW JERSEY

| | Gasoline: Tank wagon | Gasoline: Service station | Gasoline: Incl'ds tax of | Kero. tank wagon |
|---|---|---|---|---|
| Atl'tic City, N.J. | 18.0 | 17 5 | 4.0 | 10.0 |
| Newark | 17.3 | 16.8 | 4 0 | 9.5 |
| Annapolis, Md. | 18.6 | 18.1 | 5.0 | 10.0 |
| Baltimore | 18.1 | 17.6 | 5.0 | 9.5 |
| Cumberland | 19.6 | 18.5 | 5 0 | 12.7 |
| Wash'g'n, D. C. | 16.3 | 14 5 | 3.0 | 11.5 |
| Danville, Va. | 20 7 | 20.2 | 6.0 | 12.9 |
| Norfolk | 19.2 | 18.7 | 6.0 | 11.3 |
| Petersburg | 20.0 | 19.5 | 6 0 | 11.4 |
| Richmond | 19.6 | 15.6 | 6.0 | 11 7 |
| Roanoke | 20.8 | 15.4 | 6 0 | 12.9 |
| Charls'n, W.Va. | 19.0 | 18.5 | 5 0 | 12.6 |
| Parkersburg | 18.3 | 15.9 | 5.0 | 11.2 |
| Wheeling | 19 0 | 18.5 | 5.0 | 12.2 |
| Charlotte, N. C. | 22.4 | 21 0 | 7.0 | 13.5 |
| Hickory | 22.7 | 21.0 | 7.0 | 13 7 |
| Mt. Airy | 22.7 | 22.2 | 7.0 | 13.8 |
| Raleigh | 22.2 | 21.0 | 7.0 | 13 3 |
| Salisbury | 22.5 | 20.0 | 7 0 | 13.6 |
| Charleston, S.C. | 20.2 | 19.7 | 7 0 | 11.3 |
| Columbia | 22.0 | 21.5 | 7.0 | 13.2 |
| Spartanburg | 22.4 | 21 0 | 7.0 | 13.5 |

Note—Dealer contracts are written at the dealer's price, which to divided dealers is 2½ cents per gallon above the tank car price and to undivided dealers 2 cents above the tank car price. This affects all points. Kerosene 1 cent off tank wagon for 25 gallons or more under contract except New Jersey and Baltimore, Md.

### Nebraska

STANDARD OIL CO. OF NEBRASKA

| | Gasoline: Tank wagon | Gasoline: Service station | Gasoline: Incl'ds tax of | Kero. tank wagon |
|---|---|---|---|---|
| Omaha | 17 3 | 19.3 | 5.0 | 9.0 |
| McCook | 18.4 | 18.4 | 5.0 | 8.0 |
| Norfolk | 17.0 | 17 0 | 6 0 | 8 5 |
| North Platte | 18.0 | 18.0 | 5.0 | 8.5 |
| Scottsbluff | 18.8 | 19.3 | 5.0 | 11.0 |

Note—Discount to dealers, including any rentals under lease and agency agreements: Undivided accounts, Standard Red Crown and Red Crown Ethyl Gasoline 4 cents, Reliance (third brand) 3 cents, under service station price. Divided accounts, Standard Red Crown Ethyl Gasoline 3½ cents, Reliance (third brand) 2½ cents, under service station price. Discounts to consumers covered only by form CD-1, official commercial consumer contract.

### Central South District

STANDARD OIL CO. OF LOUISIANA

| | Gasoline: Tank wagon | Gasoline: Service station | Gasoline: Incl'ds tax of | Kero. tank wagon |
|---|---|---|---|---|
| N. Orleans, La. | 19.8 | 16.5 | *7.0 | †12.0 |
| Baton Rouge | 19.2 | 18.7 | 6 0 | †12.0 |
| Alexandria | 20.1 | 19.6 | *7.0 | †10.0 |
| Lafayette | 20 3 | 19.8 | *7.0 | †12.0 |
| Lake Charles | 20.2 | 19.7 | *7.0 | †12.0 |
| Shrevepor. | 18.0 | 15.0 | 6.0 | †12 0 |
| Knoxville, Tenn. | 23.7 | 23.2 | 8.0 | 13.0 |
| Memphis | 22.1 | 20.0 | 8.0 | 9.5 |
| Chattanooga | 23.5 | 23 0 | 8.0 | 11.0 |
| Nashville | 23.0 | 16 0 | 8.0 | 11.0 |
| Bristol | 23.0 | 19.0 | 8.0 | 14.0 |

*Includes city tax of 1 cent. †Louisiana kerosene prices include 1-cent state tax.

Note—Dealer contracts are written at 2½ cents above the posted tank car price.

### Pacific Coast Territory

STANDARD OIL CO. OF CALIFORNIA*

| | Gasoline: Tank wagon† | Gasoline: Posted retail | Gasoline: Incl'ds tax of | Kero. tank wagon |
|---|---|---|---|---|
| San Francisco | 12 0 | 15.0 | 4 0 | 12.5 |
| Los Angeles | 10.0 | 13.0 | 4.0 | 12.5 |
| Fresno, Calif. | 12.0 | 15.0 | 4.0 | 14.0 |
| Phoenix, Ariz. | 18.5 | 21.5 | 6.0 | ‡16.0 |
| Reno, Nev. | 17 5 | 20.5 | 5.0 | 15.5 |
| Portland, Ore. | 19.0 | 22.0 | 5.0 | 13.5 |
| Seattle, Wash. | 19.0 | 22.0 | 6.0 | 13 5 |
| Tacoma | 19.0 | 22.0 | 6.0 | 13.5 |
| Spokane | 21.0 | 24.0 | 6.0 | 18.0 |

*Retail prices posted by Standard Stations, Inc., a subsidiary.

†Prices are at company's plant or depots, as company does not operate stations. A 4-cent per gallon discount is given dealers and customers taking tank wagon lots except in Phoenix where the discount is 1 cent.

‡Includes 5 cents state tax.

### Pennsylvania, Delaware and Part of New England

ATLANTIC REFINING CO.

| | Gasoline: Tank wagon | Gasoline: Service station | Gasoline: Incl'ds tax of | Kero. tank wagon |
|---|---|---|---|---|
| Philadelphia, Pa. | 15.0 | 17.0 | 4.0 | 10 0 |
| Pittsburgh | 15.5 | 17.5 | 4.0 | 10.0 |
| Allentown | 15.0 | 17.0 | 4.0 | 10.0 |
| Erie | 15 0 | 17.0 | 4.0 | 9 0 |
| Scranton | 15.5 | 17.5 | 4.0 | 10.0 |
| Altoona | 15.5 | 17.5 | 4.0 | 10 0 |
| Dover, Del. | 15.5 | 17.5 | 4.0 | 10.0 |
| Wilmington | 15.5 | 17.5 | 4.0 | 9.0 |
| Boston, Mass. | 14.5 | 16.5 | 4 0 | 8.0 |
| Springfield | 14.5 | 16.5 | 4 0 | 8.5 |
| Worcester | 15.5 | 17.5 | 4.0 | 9.0 |
| Hartford, Conn. | 14.4 | 16.4 | 3.0 | 9.0 |
| New Haven | 14.2 | 16.2 | 3.0 | 9.0 |
| Providence, R.I. | 11.5 | 13.5 | 3.0 | 8.0 |

Note—Tank wagon prices are those applicable to consumers purchasing lots of 100 or more gallons in one delivery.

### New York and Part of New England

STANDARD OIL CO. OF NEW YORK

| | Gasoline: Tank wagon | Gasoline: Service station | Gasoline: Incl'ds tax of | Kero. tank wagon |
|---|---|---|---|---|
| Albany, N. Y. | 16 1 | 17.1 | 4.0 | 9 0 |
| Met. New York | 15.5 | 16.5 | 4 0 | 8.0 |
| Buffalo | 16.5 | 17 5 | 4.0 | 8.5 |
| Rochester | 16.5 | 17.5 | 4.0 | 8.5 |
| Syracuse | 16 0 | 17.0 | 4 0 | 9.0 |
| Boston, Mass. | 15 5 | 16.5 | 4.0 | 8 0 |
| Portland, Me. | 17 2 | 18 2 | 5 0 | 8.5 |
| Manch't'r, N.H. | 18.2 | 19.2 | 5 0 | 9.0 |
| Burlington, Vt. | 18.8 | 19.8 | 5.0 | 9.5 |

### Ohio

STANDARD OIL CO. OF OHIO

| | Gasoline: Tank wagon | Gasoline: Service station | Gasoline: Incl'ds tax of | Kero. tank wagon |
|---|---|---|---|---|
| Ohio points | 17.5 | 19.5 | 5.0 | *13.5 |

*Includes state tax of 1 cent, effective July 22

### Canada*

IMPERIAL OIL, LTD.
Imperial 3-Star Gasoline

| | Gasoline: Tank wagon | Gasoline: Service station | Gasoline: Incl'ds tax of | Kero. tank wagon |
|---|---|---|---|---|
| Hamilton, Ont.† | 26.5 | 27.5 | 6.0 | 17.5 |
| Toronto, Ont.†. | 26.5 | 27 5 | 6.0 | 17.5 |
| Brandon, Man.* | 31.0 | 34.5 | 7.0 | 22.5 |
| Winnipeg, Man. | 28.7 | 31.7 | 7.0 | 20.2 |
| Regina, Sask. | 29.0 | 32.0 | 6.0 | 21.5 |
| Saskatoon, Sask. | 31.8 | 34.8 | 6 0 | 24.3 |
| Edmonton, Alta. | 31.2 | 34.2 | 6.0 | 23.7 |
| Calgary, Alta. | 28.5 | 31.5 | 6.0 | 21.0 |
| Vanc'ver, B.C.†. | 30.0 | 31.0 | 7.0 | 24.0 |
| Montreal, Que.. | 24.0 | 27 0 | 6.0 | 17.0 |
| St. Johns, N. B. | 26.5 | 30.5 | 7.0 | 21.0 |
| Halifax, N. S. | 25.5 | 29.5 | 6.0 | 21.0 |

*Imperial gallon used in Canada. †Dealer discount posted tank wagon on gasoline in Ontario and British Columbia subject to dealer's discount of 3 cents per gallon.

## Retail Price Changes

**Regular-Grade Gasoline and Kerosene**

Standard Oil Co. (Kentucky) April 27 advanced gasoline tank wagon and station prices 2 cents; May 5, reduced them one-half cent; May 6, reduced them one-half cent.

Magnolia Petroleum Co. April 24 advanced gasoline tank wagon and station prices 1 cent in Fort Smith; April 30, advanced them 1 cent in Little Rock.

Standard Oil Co. of New Jersey April 30 advanced gasoline station price 1 cent in Atlantic City. May 12 the company advanced normal gasoline tank wagon and station prices one-half cent throughout its territory. This left station prices unchanged in Cumberland, Washington, Roanoke, Richmond, Parkersburg, Charlotte, N. C., Hickory, Raleigh, Salisbury and Spartanburg.

Standard Oil Co. of Ohio May 9 advanced gasoline tank wagon and station prices one-half cent.

Standard Oil Co. of Louisiana May 11 reduced gasoline station price in Nashville one-half cent. May 12, made a general advance of one-half cent throughout Louisiana and Tennessee, leaving the station price unchanged, however, in New Orleans and Shreveport, La., and in Memphis, Nashville and Bristol, Tenn.

Standard Oil Co. of California May 9 advanced gasoline tank wagon and station prices 3½ cents in Seattle and Tacoma.

Atlantic Refining Co. May 9 advanced gasoline tank wagon and station prices one-half cent in Philadelphia, Pittsburgh, Allentown, Scranton, Altoona, Dover and Wilmington. May 8, reduced gasoline tank wagon and station prices one-half cent in Providence.

Standard Oil Co. (Indiana) April 13 reduced gasoline station price 1.1 cents in Sioux City; April 16, reduced it 2 cents; April 18, reduced it 1 cent; April 20, reduced gasoline tank wagon price 3.3 cents. April 18, reduced gasoline station price 1.1 cents in Davenport; April 19, reduced gasoline station price 2.1 cents in Des Moines; April 21, reduced it 1.6 cents; April 25, reduced it 1 cent; April 25, reduced gasoline tank wagon price 3.7 cents; April 21, advanced gasoline tank wagon price 0.5 cents in Evansville.

Standard Oil Co. of New York, May 11 advanced gasoline tank wagon and station prices 1 cent in Metropolitan New York. May 14, advanced gasoline tank wagon and station prices one-half cent in Buffalo and Rochester.

### SCOUTS' ANNUAL MEETING

The National Oil Scouts Association of America is planning its annual convention to be held at Lake Charles, La., May 21 and 22. J. A. Bonham, scout and land man for Magnolia Petroleum Co. at Lake Charles, along with other members of the local committee have arranged an extensive program which will include entertainment, talks by prominent men in the oil industry which will be interesting as well as educational, and the business meetings. Dr. E. E. Rosaire, of the Independent Exploration Co., will present a technical paper on the seismograph. The torsion balance will be the subject of a talk by Dr. Olaf Sundt. J. L. Mathieu, manager of the Schlumberger Co., will address the convention on the more recent and less widely understood device, the Schlumberger.

### J. T. SENCABAUGH DIES

John T. Sencabaugn, pioneer oil man and early associate of John D. Rockefeller, Sr., died from injuries suffered in a fall at his home in Cleveland. His age was 95.

# NEWS FOR SALES DEPARTMENTS

## Terms Offered to Settle Cleveland Gasoline Strike

Offering every aid the federal government may extend to both sides in settling the Cleveland gasoline strike, Administrator Ickes has sent the following message to operators in the strike zone:

"I regret to hear Cleveland gas strike situation has not yet been adjusted. After considering problem and desiring to be of assistance to both sides and to people of Cleveland I hereby recommend and urge a resumption of work upon acceptance of the following as a fair and equitable method of settlement. Such action would assist the President in his national recovery program and is in the interest of public safety and welfare.

I propose an immediate resumption of work on the following conditions:

1. Strike to be called off immediately.

2. All strikers will be taken back to work without discrimination by either party.

3. Immediately after the resumption of work each company will begin negotiations with the representative of their employes and continue the negotiations until a mutually satisfactory settlement is reached covering terms and conditions of employment.

4. In cases where a dispute arises as to whether employes of any company have chosen Service Station Union No. 18378 (which employers recognize as a legitimate bargaining agency) or any other agency, as their accredited representatives, such dispute shall be settled by an election conducted by the department of labor for that company's employes.

5. If negotiations are not concluded to a satisfactory agreement within 14 days after the resumption of work, unless extended by mutual consent, questions in dispute, impossible of settlement by conciliation and mutual understanding, may by mutual consent be referred to a board of arbitration equally representative of both parties, with an impartial chairman mutually agreed upon. In the event of failure to agree upon a chairman within three days, such chairman shall be designated by the administrator of the petroleum code, the secretaey of the interior of the United States.

6. Changes in wages and working conditions resulting from negotiation and any arbitration awards will be retroactive to the time that employes return to work.

### SHELL GETS ARMY CONTRACT

ST. LOUIS, Mo., May 12.—The United States Army Air Corps has awarded a contract to Shell Petroleum Corp. for approximately 2,740,000 gallons of aviation gasoline, to be supplied during the six months' period ending June 30, Maj. James H. Doolittle, manager of the company's aviation sales department, said

The contract does not include gasoline used in the Army's air mail flying, which is not a part of the Air Corp's regular activities.

### MEXICO CUTS GASOLINE DUTY

MEXICO CITY, Mexico, May 12.—The ministry of finance has announced a reduction of 50 per cent in duties on gasoline introduced by way of Sonora state border points and destined for local consumption there. The reason given by the ministry is that large quantities of gasoline are being introduced as contraband and that the treasury will benefit by lower tariffs and reduced vigilance costs.

### AVERAGE 50-CITY PRICE OF GASOLINE IS HIGHER

The average service station price of regular grade gasoline, exclusive of taxes, in 50 representative cities throughout the United States on May 1, 1934, was 13.66 cents a gallon, as compared with 13.55 cents on April 1, an advance of .11 cent. It is .57 cent less than the 50-city price on March 1.

The 50-city price May 1, 1933, was 11.60 cents. The 1934 composite price thus represents a gain of 2.06 cents over that of a year ago. Also the May 1 gain over April 1 this year is greater than that recorded in 1933, when the gain was only .02 cent.

The lowest average price for May 1 during the 10 years the 50-city record has been kept was the one which prevailed in 1933. The highest May 1 price was that of 1924, when 21.48 cents was paid.

## Extension of Metropolitan Area Is Subject of Debate

CHICAGO, May 14.—The regional Planning and Coordination Committee No. 3 is expected to forward to Washington soon its recommendation and report on the hearing held in Chicago, May 9, on the recent extension of the metropolitan Chicago gasoline price cuts to take in a larger area than heretofore has been included in such adjustments. At the hearing certain groups of retailers protested against extension of the metropolitan district in price reductions, while other groups, including numerous dealers for major companies, endorsed the action.

Officials of some major companies believe the extension of the metropolitan district may represent a permanent policy. Cuts made by Standard Oil Co. (Indiana) recently were made as far away as Aurora, Elgin, Joliet and Kankakee. Normally the district has been considered to end at Gary, Beecher, Wheaton, Antioch and Waukegan.

Those protesting against the action said it injured their markets, contending metropolitan marketing conditions were much more unstable and unsettled than those outside. Standard of Indiana introduced evidence to show that prices in the new region already had been reduced before the company made its reductions.

### COLORADO GASOLINE SOURCES

Some interesting figures on the sources of Colorado's gasoline supply are revealed by the state motor fuel tax division. The consumption of gasoline in the State in 1933 was 155,812,578 gallons. Of this quantity, 28,670,241 gallons were produced in the State and the remainder was imported. Kansas furnished 36,439,264 gallons; Oklahoma, 36,524,991 gallons; Texas, 7,143,356 gallons; Wyoming, 43,784,017 gallons; and the remainder came from Utah, New Mexico and Nebraska. In 1916, Colorado supplied only 1.98 per cent of its consumption. The quantity has increased until last year it supplied 18.4 per cent. Wyoming, in 1928, supplied 74,107,000 gallons, but imports from that State have gradually decreased, while Oklahoma shipments have increased each year. Gasoline taxes in Colorado, for the State only, amounted to $47,250,232 since the first tax of 1 cent a gallon was imposed in May, 1919. The tax is now 4 cents.

### OPPOSED TO DIFFERENTIALS

CHICAGO, May 14.—Standard Oil Co. (Indiana) is said to be opposed to the principle of a gasoline price differential allowed to any class of retailers below regular posted prices. Officials of the company are reported as saying they would oppose to the end the establishment of such a concession, which recently has been advocated strongly by some classes of independent sellers.

## Federal Taxes Continue a Heavy Burden on Motorist

Federal taxes cost motor vehicle owners and operators substantially more in March, 1934, than in March, 1933, with gasoline again paying the largest share of the tax bill, U. S. Bureau of Internal Revenue reports indicate.

Federal gasoline tax collections amounted to $11,685,494.34 as against $10,547,165.85 in March, 1933, a gain of 10.8 per cent. Federal taxes on lubricating oil were $1,914,251.53 as compared with $1,370,720.44 in March, 1933, a gain of 39.7 per cent.

Petroleum products again bore the greater share of the tax bill, gasoline alone yielding more than half the total income. Following are the detailed figures:

| Source of Revenue | Amount Collected 1934 | 1933 |
|---|---|---|
| Lubricating oils | $ 1,914,251.53 | $ 1,370,720.44 |
| Gasoline | 11,685,494.34 | 10,547,165.85 |
| Tires | 1,839,327.63 | 965,421.04 |
| Inner tubes | 442,540.99 | 205,138.97 |
| Auto trucks | 512,157.29 | 139,641.57 |
| Automobiles and motorcycles | 3,822,208.09 | 1,611,840.18 |
| Auto parts and Accessories | 486,758.86 | 282,872.97 |
| Transportation of oil by pipe line | 906,650.94 | 843,657.74 |
| Total | $21,609,389.67 | $15,966,458.76 |

### TAX DRIVING TOURISTS AWAY

Many tourists, as soon as they find that a state has excessive gasoline taxes, plan trips which will avoid that section of the country, according to the director of the Texas Co.'s road map division, Stu Hawley. Writing in the May issue of the Texaco Star, Mr. Hawley says: "A majority of the routing requests now being received by Texaco National Road Reports are for trips into states in which higher gasoline tax rates do not prevail."

Mr. Hawley finds that in the season just closed, Florida, which has a 7-cent gasoline tax, has had more visitors than at any time during the past four years. On the other hand, for several years fewer and fewer out-of-state automobiles have been coming to Florida. Many people who used to motor South for the winter have turned to the railroad because of high gasoline taxes.

### OLEANDER PURCHASED BY PURE

GALVESTON, Tex., May 12.—Sale of the Oleander Oil Co., an independent wholesale distributing concern, operating in Houston, Galveston and Beaumont, to the Pure Oil Co. was announced here by J. K. Sullivan of Galveston who, with Thomas Lombardo of Beaumont, organized the company in 1925. The consideration was not given.

### PAUL McELROY IN NEW POST

Earle W. Webb, president of the Ethyl Gasoline Corp., announces the appointment of Paul McElroy, formerly with Batten, Barton, Durstine & Osborne, Inc., as sales representative of Ethyl. Mr. McElroy, with headquarters in New York, will contact Ethyl licensees and automobile manufacturers throughout the United States.

## February Gasoline Sales Show Increase Over 1933

Gasoline consumption in the United States, according to figures compiled by the American Petroleum Institute, was 1,050,206,000 gallons in 1934, as compared with 957,207,000 gallons in 1933, a gain of 92,999,000 gallons. The February consumption of the present year compares with 1,161,367,000 gallons in January, a drop of 111,161,000 gallons. This is accounted for by the fact that February was a short month. The daily average consumption in February was 37,507,000 gallons as compared with 37,463,000 gallons in January.

The Institute's estimate of consumption by states in February, 1934, and February, 1933, based upon the quantity of gasoline sold or offered for sale as reported by wholesalers and retailers under the tax inspection laws, follows:

| | Gallons Feb., 1934 | Feb., 1933 |
|---|---|---|
| Alabama | 12,283,000 | 8,806,000 |
| Arizona | 5,589,000 | 4,756,000 |
| Arkansas | 9,696,000 | 7,598,000 |
| California | 94,112,000 | 97,771,000 |
| Colorado | 16,639,000 | 9,320,000 |
| Connecticut | 13,214,000 | 14,297,000 |
| Delaware | 2,273,000 | 2,859,000 |
| District of Columbia | 6,761,000 | 7,313,000 |
| Florida | 21,521,000 | 19,115,000 |
| Georgia | 16,687,000 | 12,451,000 |
| Idaho | 3,493,000 | 1,768,000 |
| Illinois | 64,560,000 | 58,071,000 |
| Indiana | 27,582,000 | 25,704,000 |
| Iowa | 25,453,000 | 20,254,000 |
| Kansas | 27,131,000 | 20,730,000 |
| Kentucky | 11,789,000 | 10,372,000 |
| Louisiana | 12,254,000 | 10,977,000 |
| Maine | 4,915,000 | 5,036,000 |
| Maryland | 11,600,000 | 11,859,000 |
| Massachusetts | 33,102,000 | 33,036,000 |
| Michigan | 51,948,000 | 41,766,000 |
| Minnesota | 24,524,000 | 20,267,000 |
| Mississippi | 8,821,000 | 7,087,000 |
| Missouri | 33,745,000 | 30,690,000 |
| Montana | 4,374,000 | 2,591,000 |
| Nebraska | 15,749,000 | 11,576,000 |
| Nevada | 1,354,000 | 1,049,000 |
| New Hampshire | 3,622,000 | 3,265,000 |
| New Jersey | 39,367,000 | 45,845,000 |
| New Mexico | 3,561,000 | 2,930,000 |
| New York | 87,616,000 | 94,702,000 |
| North Carolina | 17,719,000 | 15,867,000 |
| North Dakota | 4,423,000 | 2,698,000 |
| Ohio | 60,967,000 | 55,675,000 |
| Oklahoma | 21,627,000 | 18,093,000 |
| Oregon | 10,862,000 | 11,723,000 |
| Pennsylvania | 67,884,000 | 64,020,000 |
| Rhode Island | 5,845,000 | 6,060,000 |
| South Carolina | 9,117,000 | 7,089,000 |
| South Dakota | 6,846,000 | 6,012,000 |
| Tennessee | 15,073,000 | 13,033,000 |
| Texas | 58,631,000 | 48,392,000 |
| Utah | 4,147,000 | 2,901,000 |
| Vermont | 2,170,000 | 2,073,000 |
| Virginia | 15,968,000 | 14,794,000 |
| Washington | 17,098,000 | 15,081,000 |
| West Virginia | 8,528,000 | 7,078,000 |
| Wisconsin | 25,714,000 | 21,152,000 |
| Wyoming | 2,252,000 | 1,606,000 |
| Total | 1,050,206,000 | 957,207,000 |
| Daily average | 37,507,000 | 34,186,000 |

### H. J. SALADIN IS PROMOTED

CHICAGO, May 14.—As a part of the alignment of executive positions in the lubricating department of Standard Oil Co. (Indiana) on a basis similar to that in other departments, H. J. Saladin, formerly assistant manager of the technical division, has been made manager of the technical department. R. E. Wilkin was appointed manager of the automotive engineering department and assistant manager of the technical department. These departments will function under the direct supervision of L. C. Welch, assistant general manager of the lubricating and technical departments.

### C. M. SOUTHARD SALES MANAGER

C. M. Southard, well known in the Eastern and Middle West oil sales fraternity and who for many years was associated with the Shell Petroleum Co. in St. Louis, has been made sales manager of the Warner-Quinlan Co.

# NEWS FOR PETROLEUM REFINERS

## Refiners Hold Conference on Cracking Developments

HOUSTON, Tex., May 12.—Technicians of large refining interests closed a four-day cracking development conference here yesterday. The conference was participated in by the Texas Co., whose director of research is F. W. Hall of New York; the M. W. Kellogg Co. with P. C. Keith, New York, research director, attending; the Gasoline Products Co. with William F. Moore, vice president and general manager, New York, attending; the Standard Oil Co. (Indiana), R. E. Wilson, vice president, Chicago; the Standard Oil Co. of New Jersey, with Dr. G. M. Maverick, Bayway, N. J., as chairman, in attendance, and the Humble Oil & Refining Co., the Standard Oil Co. of Louisiana and the Imperial Oil Co. Doctor Maverick also is representing the latter companies.

The conference opened Tuesday in Port Arthur with a visit through the Texas Co.'s refinery there. Thursday morning it moved to Houston. Thursday afternoon the technicians adjourned to Texas City, where they went through the Pan American's new refinery. Friday morning a visit was made to Humble's Baytown plant.

The conference represents an association of oil companies formed to contribute research and new processes and patents for the cracking process of refining petroleum into gasoline, kerosene, etc.

The Gasoline Products Co. is the patent holding company which licenses all cracking processes developed either by it or associated oil companies.

These processes are available to all oil companies, independents included. They also are available through the Kellogg company, a licensed agent of the Gasoline Products Co.

Some of the processes which have been developed include the Tube and Tank process, made available by the Standard of New Jersey; the Holmes-Manley process, through the Texas Co.; the de Flores process, developed jointly by the Standard of Indiana and the Texas Co.

The conferences are held annually. Next year the meeting will be held in Bayway, N. J., when the Standard of New Jersey will be host.

### CANADIAN PETROLEUM IMPORTS

OTTAWA, Canada, May 12.—Official figures of the department of trade and commerce show that imports into Canada of petroleum, asphalt and their products in March were valued at $2,990,150 compared with $1,827,978 in February. The major sources of March imports were: United States, 73.6 per cent; Peru, 17.9 per cent; Colombia, 7.7 per cent.

Crude petroleum imports into Canada in March were obtained from the following sources: United States, 51,026,031 gallons; Peru, 14,506,869 gallons; Colombia, 7,910,873 gallons.

Canadian exports of petroleum and petroleum products in March were valued at $146,308 compared with a February total of $24,845.

### NEW WYOMING PLANT

EVANSTON, Wyo., May 14.—R. C. Andre and associates of this city are building a small refinery at the intersection of the Lincoln and Cumberland Highways near here. The owners are producing crude from local wells and this will be processed in the new topping unit. Mr. Andre has been in the oil business for many years, having operated in the Pennsylvania and California fields before moving here.

### FLORIDA JOBBERS ORGANIZE

An organization of jobbers and dealers has been perfected in Miami, Fla., for the purpose of reducing the gasoline tax in that State from 7 to 5 cents per gallon. The present tax of 7 cents which does not include the Federal tax of 1 cent is the same as that of Tennessee, the only other State having a 7-cent tax. It is claimed that the high tax in Florida has brought many complaints from tourists as well as permanent residents of the State and it is believed has deterred many people from spending a winter vacation period in Florida.

## Entire Marketing Program for Next Institute Meeting

Announcement has been made of completion of the program for meetings of the Division of Marketing in connection with the fourth mid-year meeting of the American Petroleum Institute at Pittsburgh, Pa., May 22, 23 and 24.

The first meeting of the Division of Marketing will be held at 10 a. m., Wednesday, May 23, in the seventeenth floor "Silver Room," with W. V. Hartmann, of the Gulf Refining Co., presiding. The general subject will be "The Code." Speakers will be C. E. Arnott, of the Socony-Vacuum Corp., Institute Vice President for Marketing, and J. E. Dyer, of Code Regional District No. 1. There will be open forum discussion of the marketing code.

The second meeting of the Division will be held at 10 a. m., Thursday, May 24, in the same room, with S. B. Eckert, of the Sun Oil Co., presiding. Subjects and speakers will be: "Tomorrow's Motor Car," A. Ludlow Clayden, Sun Oil Co.; "What Does a Customer Think of Us?" E. L. Barringer, National Petroleum News. An open forum discussion of marketing problems will close the meeting.

### PUT ON CORROSION COMMITTEE

J. E. Pollock, of the Humble Oil & Refining Co., Baytown, Tex., has been made a member of the American Petroleum Institute's Committee on Corrosion of Refinery Equipment. Mr. Pollock succeeds Dr. Sherman S. Shaffer, resigned.

### OVERTON PLANTS ENLARGED

OVERTON, Tex., May 14.—Additions to several of the larger refineries here are being carried forward rapidly. The Arrow Refining Co. is building new cooling towers and adding building and office space. Oil Refineries is building foundations and taking out old-style oil field boilers preparatory to replacing these with two 250-horsepower return tube boilers of late type. The company is also making an addition to the office, the total cost of improvements being about $6,000. The Murray Oil & Gas Co. plant is adding office space.

## Guthrie Plant Remodeled and Is in Operation Again

GUTHRIE, Okla., May 14.—The old skimming plant of the Guthrie Refining Co., acquired by Dr. E. G. Sharp, has been reconditioned and is making gasoline, kerosene, fuel oil and other products. Doctor Sharp hopes to increase production to the plant's 500-bbl.-a-day capacity. L. Grigsby, formerly employed at Cushing and Oklahoma City refineries, is plant superintendent.

The crude supply is to come from the Oklahoma Petroleum Pipe Line Co. from the Eason Oil Co.'s No. 1 Hull, east of Lovell. Until the pipe line is laid to the plant, the oil is being trucked.

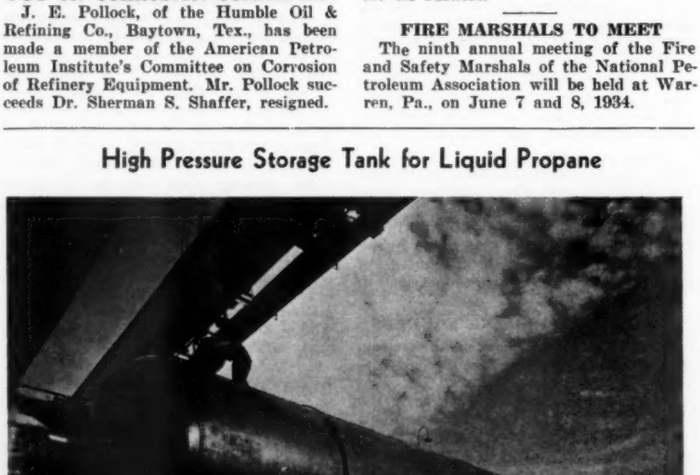
### LARGE FURNACE OIL USER

Mount Holyoke College at South Hadley, Mass., will be a large consumer of heating oils starting next fall, according to present plans. The college has let a contract for the installation of 150 General Electric oil furnaces. These furnaces will replace all the present heating equipment. Ninety of the furnaces will be installed in the central heating plant in one building. The remainder will be used to heat isolated buildings. This is said to be the largest single order ever placed for oil burners.

### FIRE MARSHALS TO MEET

The ninth annual meeting of the Fire and Safety Marshals of the National Petroleum Association will be held at Warren, Pa., on June 7 and 8, 1934.

## High Pressure Storage Tank for Liquid Propane



*Propane tank 10'x50' to be used for storing the material under pressure as part of dewaxing unit nearing completion in Union Oil Co.'s refinery at Oleum, Calif. The company will offer a new line of lubricants upon completion of the work*

## Engine Changes Result in Revision of Laboratories

Complete revision of its Detroit research laboratories to meet engine changes during the next few years is announced by the Ethyl Gasoline Corp.

Dynamometers have been altered to keep pace with increased horsepower. Larger exhaust lines have been installed and radiator and test control equipment improved. The new dynamometer equipment permits the testing of engines of 300 horsepower at speeds up to 6,000 r.p.m. New air compression apparatus will supercharge to 30 pounds per square inch above atmospheric pressure any engine likely to be built during the next few years.

"Engines in 1934 passenger cars have about 4.4 per cent more power than in 1933, and trends indicate that in 1935 they will be still more powerful," says the announcement. "Passenger car horsepower has increased 88 per cent since 1925 when, following the chemical discovery of tetraethyl lead as an antiknock agent in the General Motors laboratories, pioneer development in gasoline improvement, a continuing advance in motor car performance, was made possible.

"In the early part of 1928, when the Ethyl corporation installed the research equipment just replaced, automobile car plants produced only a fraction of the power which is characteristic of the 1934 models. The car of greatest production had only 20 horsepower, and the most powerful engine had 120 horsepower. Only 5.6 per cent of all models had in excess of 100 horsepower, while the most popular horsepower was between 00 and 80.

"This year the low-priced cars are equipped with engines of approximately 80 to 90 horsepower. Only 8.5 per cent of all models have horsepower of 80 or less as against 82 per cent in 1927. Thirty per cent of the models have horsepower in excess of 100, and the maximum is 325.

"By far the largest gain in the horsepower of engines during the last five years has been due to the large increase in the effective pressure on the piston brought about through increases in the compression ratio of the engine or through the provision of easier breathing of air through the carburetor, intake manifold and valves."

## Franklin Creek Refining to Start New Construction

FRANKLIN, Pa., May 14.—Construction work is to begin within two weeks on a $200,000 modernization program of the Franklin Creek Refining Corp., subsidiary of L. Sonneborn Sons Corp., that thus brings its expenditures in refinery equipment in this area in recent months to nearly half a million dollars.

The Franklin Creek installations include a fractionating tower on the 1,500-bbl. crude distillation unit and a 2,000-bbl. lub rerun unit. As the new equipment is intended to provide a number of special fractions not feasible with the batch batteries, it is understood that the older equipment will not be discontinued. The expansion phase is borne out by the provision for a new fuller's earth burner at a cost of about $40,000. The company will feature special naphthas and lubs of higher flashpoint and lower Conradson carbon. Similar equipment was installed some months ago at the Sonneborn subsidiary in Petrolia.

# LOOKING FOR BETTER REFINERY TUBES?

## TRY TIMKENS

Every refinery operator has looked forward to the day when refinery tube service would be extended—costs curtailed. That day has arrived.

Timken refinery tubes are made to do specific refinery jobs with fewer replacements. They are produced by the world's largest manufacturer of alloy steel tubes in one of the most modernly equipped steel plants in the country—where the only quality standard is the highest attainable.

Timken refinery tube alloy steel formulas are selected by metallurgists who have had years of specialized experience in the development of alloy steels and are thoroughly familiar with operating conditions in all types of refinery equipment.

You need this advanced material to help to keep your production costs in profitable relationship to selling prices.

THE TIMKEN STEEL AND TUBE COMPANY, CANTON, OHIO

*District Offices or Representation in the following cities:* Detroit Chicago New York Los Angeles Boston Philadelphia Houston Buffalo Rochester Syracuse Tulsa Cleveland Erie

*World's Largest Producer of Electric Furnace Steel*

# TIMKEN ALLOY STEELS

ELECTRIC FURNACE AND OPEN HEARTH - ALL STANDARD AND SPECIAL ANALYSES

## Motor Fuel Potential Value Is Determined

(Continued from Page 26)

ature of the mixture in the intake manifold.

The upper curve in Figure 3 indicates the brake horsepower as a function of mixture temperature with compression ratio adjusted for incipient knock for a fuel of constant octane number as indicated in Figure 2.

Similarly Figures 4 and 5 show the fuel consumption as a function of mixture temperature at constant compression ratio and at compression ratio for incipient knock respectively.

Referring to Figure 3 or Table 2 it is seen that decreasing the mixture temperature from 300° F. to about 210° F. at constant compression ratio is sufficient to increase the power output of the motor from 2.68 brake horsepower to 2.98 horsepower. If the compression ratio of the motor is increased to take full advantage of the decreased mixture temperature, the same gain in power output may be obtained by decreasing the mixture temperature from 300° F. to 225° F. This increase in power output is equal to that obtained by increasing the octane number of the fuel from 55 to 76 and increasing the compression ratio of the motor to take full advantage of the increased octane number.

In actual practice the mixture temperature of a motor approximates 200° F. when thoroughly warmed up. To obtain an equivalent increase in power output of 11.2 per cent, it would therefore be necessary to reduce the mixture temperature from 200° to about 130° F. at constant compression ratio, or to about 140° F. if the compression ratio is proportionately increased.

A decrease in the mixture temperature from 200° F. to about 140° F. is as effective in increasing the potential power output of the motor as increasing the octane requirements of the fuel from 55 to 76. Even if the compression ratio of the motor is maintained constant, the gain in power output obtained by decreasing the mixture temperature from 200° F. to about 130° F. is substantially equal to the increased power output ob-

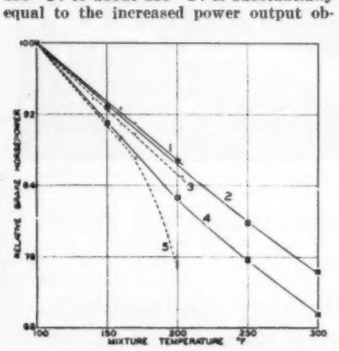



*Figure 7—Relative power output when mixture temperature is changed*

tained by increasing the compression ratio and raising the octane requirements from 55 to 76. There is no gain in power output by the use of the fuel of higher octane number unless the compression ratio of the motor is increased accordingly.

Compared to the changes in design necessary for efficiently increasing the compression ratio of a motor, reducing or eliminating heating of the intake manifold is a relatively simple procedure.

### Adequate Volatility Needed

But in order to operate with cooler mixtures it is necessary that the fuel possess adequate volatility so that it may be distributed in a uniform manner at low manifold temperatures. In order to obtain substantially uniform distribution with a mixture temperature of 200° F., a fuel with a 90° point on the A.S.T.M. distillation of 400° F. may be used. If the mixture temperature is decreased from about 200° F. to 140° F. equally uniform distribution can be obtained by using a fuel whose 90° point is about 290° F. These relationships were carefully determined in the course of earlier work done for the Natural Gasoline Association and reported four years ago.[3] and are indicated by Curve A of Figure 6.

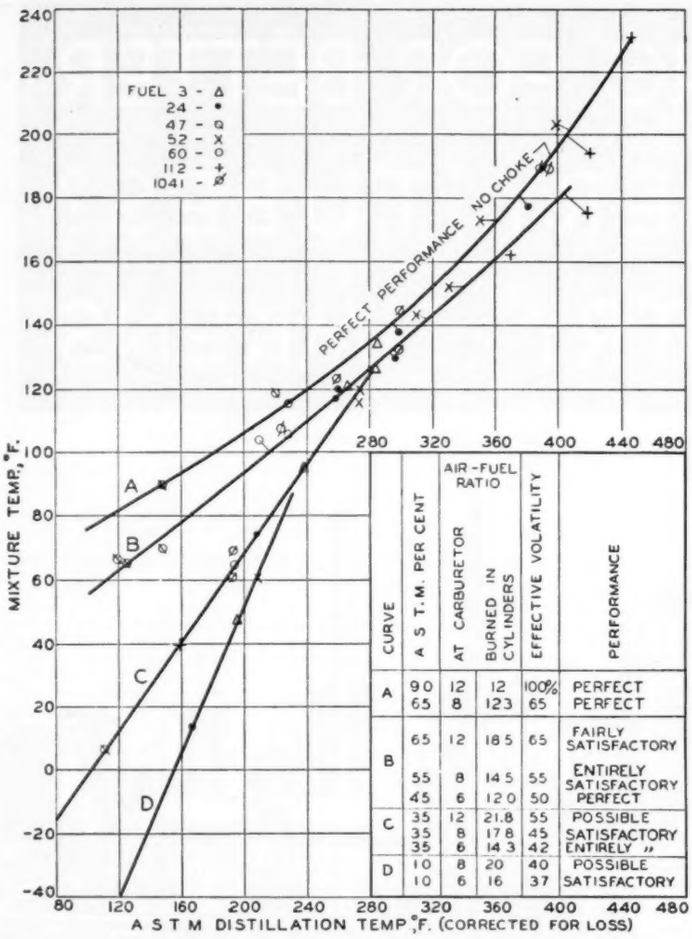

FUEL 3 - Δ
24 - •
47 - Q
52 - X
60 - O
112 - +
1041 - Ø
PERFECT PERFORMANCE NO CHOKE
MIXTURE TEMP, °F.
A S T M DISTILLATION TEMP °F. (CORRECTED FOR LOSS)
CURVE
A S T M. PER CENT
AIR-FUEL RATIO
AT CARBURETOR
BURNED IN CYLINDERS
EFFECTIVE VOLATILITY
PERFORMANCE
A 90 12 12 100% PERFECT
65 8 123 65 PERFECT
B 65 12 18 5 65 FAIRLY SATISFACTORY
55 8 14 5 55 ENTIRELY SATISFACTORY
45 6 12 0 50 PERFECT
C 35 12 21.8 55 POSSIBLE
35 8 17 8 45 SATISFACTORY
35 6 14 3 42 ENTIRELY "
D 10 8 20 40 POSSIBLE
10 6 16 37 SATISFACTORY

*Figure 6—The relationship between the A.S.T.M. distillation curve and effective volatility indicated as a function of the mixture temperature for the percentages vaporized, as indicated in lower right corner of this figure*

As an approximate indication of the relationship between the total volatility of the fuel as expressed by the 90 per cent point in the A.S.T.M. distillation and the relative mixture temperature that may be used for equally satisfactory results, the decrease in the 90 per cent point may be divided by two to indicate the allowable increase in mixture temperature.

Due to the fact that all modern carburetors contain accelerating devices of some kind, in practice it is not necessary nor desirable to supply a completely dry mixture in the manifold. For this reason the 80 per cent point in the A.S.T.M. distillation is recommended as a basis for estimating the relative mixture temperatures rather than the 90 per cent point which indicates the total volatility or temperature requirements for obtaining dry mixtures.

On the basis of these tests a decrease of 100° F. in the 80 per cent point of a motor fuel increases the potential value of that fuel independent of any change in octane number, to a degree which is equal to that obtained by increasing the knock rating of the fuel from 55 to 75 octane number. Any gain in octane number accomplished by decreasing the 80 per cent point still further increases the potential value of the fuel.

Neil MacCoull[4] in a study of the effect of gasoline volatility on engine economy has presented data which are in close agreement with those reported above. In order to reduce the results of the two investigations to a comparable basis, Figures 7 and 8 have been prepared which show the relative power output and relative fuel consumption, respectively, as a function of mixture temperature.

Curve 1 in Figure 7 gives the relative power output as a function of mixture temperature at constant compression ratio and with a constant fuel as determined by MacCoull.[4] The next lower line, 2, is a plot of the data given in Table 2 on the same basis. It is seen that there is excellent agreement between the two investigations on the effect of mixture temperatures alone on the power output of the engine. MacCoull used a constant compression ratio of 5:1, while a constant compression ratio of 4.22:1 was used in this investigation.

Curve 3, drawn as a dashed line in Figure 7, indicates the results reported by MacCoull[4] using fuels of lower 90 per cent point to correspond with the lower mixture temperatures, a constant compression ratio of 4:1, and a constant spark advance of 29°. Probably the difference in the compression ratio and particularly the use of different fuels are responsible for the differences in power output in these two series of tests. In general, however, the agreement is entirely satisfactory with our results given as Curve 2.

Curve 4 indicates the relative power output as a function of mixture temperature when the compression ratio is varied so as to obtain the full benefit of the reduced mixture temperature, but when using the same fuel so as to avoid any confusion due to changes in octane number. The lowest curve, 5, represents data obtained by MacCoull[4] when using fuels of different volatility to correspond to the different mixture temperatures, and testing the fuels at the compression ratios for incipient knock. Due to the increased octane number of the more volatile fuels used in this series by MacCoull, his curve shows a greater effect

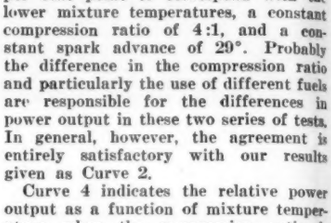



*Figure 8—Relative fuel consumption when mixture temperature is changed*

of mixture temperature on power output than would be obtained by using fuels of equal octane number.

The relative fuel consumption is plotted in Figure 8. Curve 4 connects the points obtained by MacCoull when running at constant compression ratio and constant fuel, and is in close agreement with our data representing similar operating conditions plotted as Curve 3. When using constant compression ratio and fuels of changing volatility to suit the mixture temperatures, MacCoull found no noticeable change in fuel consumption.

### Effect of Mixture Temperature

Curve 1 of Figure 8 indicates the effect of mixture temperature on fuel consumption when using a constant fuel and adjusting the compression ratio for incipient knock. The solid lines of Figure

[3]Brown, George Granger, "The Volatility of Motor Fuel," Engineering Research Bulletin No. 14, University of Michigan, May, 1930.

[4]MacCoull, Neil, S.A.E. Journal, Vol. 33, No. 5, p. 363, Nov., 1933.

TABLE 2—CONSTANT CARBURETOR SETTING COMPRESSION RATIO—INCIPIENT KNOCK FOR FUEL NO. 1

Constant Compression Ratio 4.22

| Comp. ratio | Mixture temp. (° F.) | Fuel No. 1 B.H.P. corrected | Fuel No. 1 Gals. per B.H.P. hour | Fuel No. 2 B.H.P. corrected | Fuel No. 2 Gals. per B.H.P. hour | Fuel No. 3 B.H.P. corrected | Fuel No. 3 Gals. per B.H.P. hour | Fuel No. 2T B.H.P. corrected | Fuel No. 2T Gals. per B.H.P. hour | Fuel No. 3T B.H.P. corrected | Fuel No. 3T Gals. per B.H.P. hour |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 300 | 2.613 | .1310 | 2.679 | .1305 | 2.683 | .1225 | 3.517 | .1280 | 2.672 | .1289 |
| | 250 | 2.802 | .1272 | 2.831 | .1261 | 2.864 | .1182 | 3.263 | .1236 | 2.801 | .1264 |
| | 200 | 3.041 | .1186 | 3.013 | .1207 | 3.169 | .1108 | 3.036 | .1193 | 3.025 | .1207 |
| | 150 | 3.226 | .1144 | 3.262 | .1119 | 3.274 | .1099 | 2.847 | .1152 | 3.242 | .1141 |
| | 100 | 3.507 | .1098 | 3.524 | .1091 | 3.511 | .1037 | 2.691 | .1086 | 3.486 | .1080 |
| **Compression Ratio Advanced** | | | | | | | | | | | |
| 4.22 | 300 | 2.613 | .1310 | 2.679 | .1305 | 2.683 | .1225 | 2.691 | .1280 | 2.672 | .1289 |
| 4.25 | 275 | 2.759 | .1257 | 2.755 | .1269 | 2.777 | .1197 | 2.749 | .1259 | 2.745 | .1263 |
| 4.30 | 250 | 2.841 | .1255 | 2.876 | .1248 | 2.904 | .1160 | 2.873 | .1233 | 2.862 | .1244 |
| 4.35 | 225 | 2.964 | .1213 | 2.996 | .1198 | 3.033 | .1125 | 2.993 | .1188 | 2.981 | .1182 |
| 4.40 | 200 | 3.101 | .1163 | 3.091 | .1147 | 3.157 | .1096 | 3.133 | .1154 | 3.077 | .1166 |
| 4.50 | 175 | 3.221 | .1128 | 3.267 | .1128 | 3.295 | .1061 | 3.295 | .1115 | 3.258 | .1113 |
| 4.63 | 150 | 3.400 | .1086 | 3.449 | .1071 | 3.489 | .1020 | 3.460 | .1077 | 3.425 | .1070 |
| 4.70 | 125 | 3.592 | .1041 | 3.595 | .1034 | 3.623 | .0987 | 3.606 | .1026 | 3.587 | .1018 |
| 4.74 | 100 | 3.752 | .1018 | 3.770 | .1004 | 3.796 | .0974 | 3.755 | .0994 | 3.710 | .1012 |

8 (Curves 1, 3 and 4) indicate that the gain in economy from the use of low mixture temperatures bears the same relative relationship to octane number as the gain in power output; that is, a decrease in mixture temperature from 200° F. to 140° F. gives substantially the same decrease in fuel consumption as an increase in octane number from 55 to 76 at constant mixture temperature when the compression ratio is adjusted for incipient knock in each case.

The points reported by MacCoull when using fuels of different volatilities corresponding to the mixture temperature at compression ratio for incipient knock, Curve 2, Figure 8, are somewhat erratic and may indicate that the improvement in fuel consumption brought about by a reduction in mixture temperature and corresponding reduction in the 90 per cent point of the fuel, is less than that obtained when using fuels of the same volatility but at different mixture temperature.

There is definite evidence in comparing Fuels 2 and 3 (Figures 4 and 5) that fuel consumption is increased under constant test conditions as the A.P.I. gravity of the fuel is increased. This would indicate less benefit in regard to fuel consumption from the use of low mixture temperatures and fuels of correspondingly increased volatility, and therefore increased gravity, than is indicated by the solid lines in Figure 8. Further work is necessary to settle this question.

Other series of tests conducted in the same manner but at higher compression ratios corresponding to the points for incipient knock with Fuels 2, 2T and for 3 and 3T are in substantial agreement with the results reported herein, as were the data taken at a compression ratio of 5:1 by MacCoull (Curve 1, Figure 7 and Curve 4, Figure 8).

### Conclusion Drawn

The simplest way to increase the power output of a motor is to use a cooler mixture. This can be successfully accomplished only with volatile fuels of low 80 or 90 per cent points in the A.S.T.M. distillation. Therefore, the potential value of a fuel is increased by increasing its volatility at the 80 per cent point.

The data available on the potential value of increased octane number, and increased total volatility, indicate that a decrease of 5° F. in the 80 per cent point on the A.S.T.M. distillation increases the potential value of the fuel as much as an increase in knock rating of one octane number, entirely aside from any effect increased volatility may have upon octane number.

The octane number of the various grades of commercial gasoline have become standardized and the car manufacturers may design their engine with confidence that fuel of a fairly uniform octane number may be available. The volatility of commercial regular grade motor fuel is far from standardized. The 80 per cent point of gasoline sold in Detroit during the last winter varied from about 210° F. to about 360° F., a difference of about 150° F., which is comparable in potential value to a difference of about 30 in octane number, which is a greater spread than found between "third grade" and "premium" fuels.

Perhaps the most satisfactory, immediate solution would be the incorporation in the motor of an adequate heat control capable of varying the mixture temperature of the warm motor over a range of at least 100° F. so that the potential value in fuels of high volatility might be realized. This is in line with the modern tendency to replace a manual spark advance under the name of an "octane selector" on modern cars of high compression ratio, so that the adjustment of spark advance, which under these conditions is equivalent to adjustment of compression ratio, may be made according to the octane number of the fuel used, thereby more nearly realizing in actual operation the potential value of the fuel.

If adequate heat control to the intake manifold is provided we may find the successful experiment conducted last winter by one of the leading petroleum companies of marketing straight natural gasoline as regular grade motor fuel repeated with even greater success.

### IMPERIAL OIL OFFICERS

TORONTO, Ontario, May 12.—At the annual meeting of the shareholders of Imperial Oil, Ltd., the following officers were elected: President, G. Harrison Smith; vice presidents, C. A. Eames, R. V. LeSueur, John McNeil, L. C. McCloskey; director, A. E. Halverson; secretary-treasurer, F. E. Holbrook.

### P. LENAMON KILLED

FORT WORTH, Tex., May 14.—Pete Lenamon, 35, assistant production superintendent of the Tide Water and Texas Seaboard Oil companies, Palestine, Tex., was killed near Cayuga on May 11 when a truck and trailer wrecked his automobile.

### $229,000,000 IN TAXES

Uncle Sam, through Federal taxes, took $229,387,931.80 from highway users between July 1, 1933, and March 1, 1934, according to latest reports of the Treasury. Department received by the American Petroleum Industries Committee. These tax receipts were $103,690,-793.95 higher than in the corresponding period from July 1, 1932, to March 1, 1933, collections then totaling $125,697,-137.85.

Gasoline again carried 70 per cent of the tax load, and lubricating oils about 8 per cent. Following are collections by items:

| | July 1, 1933 to Mar. 1, 1934 | July 1, 1932 to Mar. 1, 1933 |
|---|---|---|
| Gasoline | $163,130,816.49 | $93,243,898 46 |
| Lub oil | 18,354,934.44 | 10,783,617.40 |
| Tires and tubes | 21,384,443.71 | 10,030,615.58 |
| Motor cars and cycles | 19,460,733.68 | 7,788,687.63 |
| Motor trucks | 3,059,428.08 | 1,148,274.84 |
| Parts and accessories | 3,997,575.40 | 2,702,043.94 |
| Total | $229,387,931.80 | $125,697,137.85 |

# Chicago Tank Car Moderately Firm But Tank Wagon and Service Prices Upset

By SPECIAL CORRESPONDENT

CHICAGO, May 14.—With sellers hoping for early appearance of the long-awaited major company buying, with tank car prices moderately firm, but with tank wagon and service prices still greatly upset, the gasoline market presented a mixed aspect here. Actual business in the tank car market has been marking time until the outlook could be observed more definitely.

### Many Cross Currents

Market conditions in gasoline are highly complicated and unsettled. Cross currents have been growing and more than the normal number of angles and elements are involved. Groups of interests appear to be breaking up into smaller groups, with the result that the total number of goals and efforts have been multiplied. The fight for and against differentials for so-called unbranded gasoline is furnishing one of the best examples of this tendency.

Officials of Standard Oil Co. of Indiana the past week came out definitely with the statement that Standard was entirely opposed to such differentials and could not accept the principle. Various elements persisted in demanding these differentials. This is one of the roots of the many local price wars now under way in the Middle West, a large number of which are in smaller towns. Major companies report there are many instances of cuts of around 1 cent below their prices which they are not meeting.

### Jobber Buying Restricted

Jobber gasoline buying in the tank car market is quite restricted at present, although the jobbers are sending through a good total of contract shipping instructions. Gasoline consumption throughout the whole of the Middle West has been holding up well, despite freakish weather conditions. Industrial centers and business towns are recording good gallonage figures. In some of the districts dominated by more rural interests, gasoline business has been none too good, with farmers feeling the effects of adverse crop conditions.

### Kerosene

Kerosene has been perhaps a shade easier, although probably not quite so soft as some reports would indicate. Products of varied quality have recently come on the market. Farm consumption of the product is spotty but on the whole fair, with incubator item demand moderate. Tractor fuel has been getting considerable attention and some efforts are being made to establish a more definite individual market for this product. High grade distillates have been attracting attention.

With the season for zero products past, heavy and low grade fuels and gas oils are exceeding their lower cold test companions in trade interests. There has been good demand for almost every kind of gas oil and fuel oil. Refiners have bought for cracking purposes. More than that, steel companies and other large industrial consumers have been taking quantities as a result of their improved business. However, in the Chicago district prices on these products in general have not shown the advance as have those outside, due to rate considerations. They may do so later. Offerings are lower as numerous refiners are now busy on road oil.

### Naphthas

Naphthas and solvents are quiet but perhaps firmer than recently, with demand generally quite good.

### Lubricants

Lubricants have shown considerable firmness here recently, with retail motor oil sales running at good levels.

### Wax

Wax inquiries and actual orders are being well sustained, despite the fact that some additions to stocks have been noted recently. This product is still regarded as being independently steady.

### Coke

Petroleum coke is quiet and is showing no particular inclination to break out of seasonal market influences.

## Crude Oil Prices

(Continued from Page 41)

Effective September 29 in Salt Flat by Shell Petroleum Corp.

### Rocky Mountain States

| | |
|---|---|
| Ilea, light (Sept. 29, 1933) | $.96 |
| Iles, heavy (Sept. 29, 1933) | .90 |
| Florence, Colo. (June 17, 1933) | .30 |
| Fort Collins and Wellington, Colo. (June 17) | (See Salt Creek prices) |
| Big Muddy (Sept. 29, 1933) | 1.01 |
| Frannie, light (May 1, 1934) | .70 |
| Frannie, heavy (Sept. 29, 1933) | .62 |
| Salt Creek and LaBarge (Sept. 9, 1933) | See Stanolind Mid-Continent price schedule |
| Grass Creek, light (Sept. 29, 1933) | 1.18 |
| Grass Creek, heavy (Dec. 15, 1932) | .45 |
| Elk Basin (Sept. 29, 1933) | 1.18 |
| Rock Creek (Sept. 29, 1933) | 1.02 |
| Dutton Creek (July 8, 1933) | See Mid-Continent gravity prices |
| Lance Creek (Dec. 16, 1932) | .92 |
| Poison Spider (Mar. 5, 1931) | .70 |
| Hudson (June 2, 1931) | .85 |
| Lander (Mar. 5, 1931) | .40 |
| Rex Lake (Feb. 22, 1930) | 1.10 |
| Osage | 1.08 |
| Lost Soldier (Sept. 30, 1933) | .88 |
| Hamilton Dome (Dec. 16, 1932) | .25 |
| Torchlight (Sept. 29, 1933) | 1.18 |
| Greybull (Sept. 29, 1933) | 1.18 |
| Pondera | 1.18 |
| Sunburst (Sept. 29, 1933) | 1.35 |
| Cat Creek, Montana | 1.07 |
| Hogback (Sept. 29, 1933) | 1.11 |
| Lea County, N. Mex. (Sept. 29, 1933) | .75 |
| Maljamar (Sept. 29, 1933) | .70 |
| Artesia-Jackson (Dec. 1, 1933)* | .75 |

Note—Salt Creek, Torchlight, Elk Basin, Grass Creek, Frannie, Greybull, Hogback and Iles by Stanolind Oil & Gas Co. Elk Basin, Grass Creek light, Big Muddy, Rock Creek and Sunburst by Ohio Oil Co. Lost Soldier posted by Producers & Refiners Corp. Artesia, Jackson and Maljamar posted by Continental Oil Co. Lea County, effective September 29, 1933, by Humble Oil & Refining Co. and other buyers. Fort Collins, Wellington, Orchard, Florence, Big Muddy, Cat Creek, Rattlesnake and Table Mesa by Continental Oil Co. Osage posted by Arro.

*Continental Oil Co.

### North Louisiana and Arkansas

| | |
|---|---|
| Smackover, Ark. (all grades) | $.70 |
| Tullos-Urania, La. (Jan. 13, 1934) | .87 |
| Nevada, Ark. (Sept. 29, 1933) | .60 |
| East El Dorado (Sept. 29, 1933) | .70 |
| Converse, La. (Mar. 17, 1934) | 1.03 |
| Elm Grove, La. (Sept. 29, 1933) | .75 |
| Holly, La. (Mar. 17, 1934) | 1.03 |
| Pleasant Hill, La. (Mar. 17, 1934) | 1.03 |
| Zwolle, La. (Mar. 17, 1934) | 1.03 |
| Champagnolle, Ark. (Mar. 17, 1934) | .81 |
| Lisbon, Ark. (Mar. 17, 1934) | 1.03 |
| Stephens, Ark. (Sept. 29, 1933) | .70 |
| Urbana, Ark. (Mar. 17, 1934) | .60 |
| Other fields | (See gravity table) |

Note—Smackover: Effective September 29, 1933, Texas Co., Magnolia Petroleum Co., Standard of Louisiana, Louisiana Oil Refining Corp., Gulf Refining Co. and Phillips Petroleum Co. East El Dorado posted by Magnolia Petroleum Co. and Gulf Refining Co., Nevada by Standard Oil Co. of Louisiana. Urania posted by H. L. Hunt, Inc., and Louisiana Oil Refining Co. Converse, Holly, Zwolle and Urbana by Standard Oil Co. of Louisiana; Elm Grove by Simmons Oil & Refining Co.; Pleasant Hill by Standard Oil Co. and Magnolia Petroleum Co.; Champagnolle by Standard Oil Co. and Lion Oil & Refining Co.

### Eastern States

TIDE WATER PIPE CO.
(Effective May 1, 1934)

| | |
|---|---|
| Bradford, Pa. | $2.55 |
| Allegany, N. Y. | 2.55 |

SOUTH PENN OIL CO.
(Effective May 1, 1934)

| | |
|---|---|
| Pennsylvania Grade Oil in National Transit Lines (Bradford Field) | 2.55 |
| Pennsylvania Grade Oil in Southwest Pennsylvania Lines | 2.22 |
| Pennsylvania Grade Oil in Eureka Pipe Line lines | 2.17 |
| Pennsylvania Grade Oil in Buckeye Pipe Line lines | 2.07 |
| Corning Grade Oil in Buckeye Pipe Line Co.'s lines (Oct. 2, 1933) | 1.32 |

PENNZOIL CO.
(Effective May 1, 1934)

| | |
|---|---|
| Pennsylvania Grade Oil in National Transit Lines: | |
| Group A | $2.47 |
| Includes Cochran, Franklin, Hamilton and Doolittle districts. | |
| Group B | 2.46 |
| Includes Titusville district. | |
| Group C | 2.46 |
| Includes Turkey and Tidioute districts. | |
| Group D | 2.44 |
| Includes Bear Creek and Porkey districts. | |
| Group E | 2.42 |
| Includes Eldeneau, Bull Creek, Rough Run, Carbon, Dipner, Bredin, McJunkin, Jameson Kennerdell, Emlenton, Tiona, Lacy and Kinzua districts. | |
| Price depends on length of pipe line haul to plant at Oil City. | |

PURE OIL CO.
(Effective May 1, 1934)

| | |
|---|---|
| Cabin Creek, W. Va. | $2.17 |
| Bradford Hollow, W. Va. | 2.17 |
| Kelly Creek, W. Va. | 2.17 |

### Middle Western States

OHIO OIL CO.
(Effective September 29, 1933)

| | |
|---|---|
| Lima | $1.30 |
| Illinois (Jan. 5, 1934) | 1.13 |
| Princeton, Ind. (Jan. 5, 1934) | 1.13 |
| Plymouth | Shut in |
| Western Kentucky | 1.18 |
| Midland, Mich. (Sept. 30, 1933)* | 1.02 |
| Oceana, Mich. (Oct. 5, 1933) | .90 |
| Somerset, Ky. (Sept. 30, 1933) | 1.22 |
| Hart County, Ky. (Oct. 1, 1932) | 1.18 |

*Posted by Pure Oil Co. Producers Pipe Line Co. pays 5 cents per barrel over Pure Oil Co.'s posted price. Somerset, Ky., crude purchased by Ashland Refining Co., Ashland, Ky., and posted price includes premium. Hart County, Kentucky, crude purchased by Stoll Refining Co. Oceana posted by Old Dutch Refining Co. and Naph-Sol Refining Co.

### Canada

| | |
|---|---|
| Ontario (September 9, 1933): | |
| Petrolia* | $2.10 |
| Oil Springs | 2.17 |
| Turner Valley (Mar. 5, 1934):† | |
| Clear naphtha | $2.87 |
| Discolored naphtha | 2.62 |
| Crude oil, 50 gravity | 2.44 |
| Crude oil, 45 to 49.9 | 2.07 |
| Crude oil, 40 to 44.9 | 1.50 |

*Imperial Oil, Ltd. †Imperial Oil, Ltd., and Regal Oil & Refining Co.

### Mexico

| | |
|---|---|
| Panuco* | $0.95½ |

*F.o.b. ship, based on March transactions and exclusive of production and export taxes and bar dues.

## Secretary Ickes Will Speak Before I.P.A.A.

Harold L. Ickes, oil administrator and Secretary of the Interior, will be in Tulsa, Thursday, May 17. He will speak at the afternoon session of the mid-year meeting of the Independent Petro-

WIRT FRANKLIN

leum Association of America at the Coliseum at 2:30 o'clock and will be introduced by President Wirt Franklin of the association.

The program of the Independent Petroleum Association of America for the day of May 17 includes an address by Mr. Franklin, former chairman of the Planning and Coordination Committee. He will discuss the general problems of the oil industry from a Washington viewpoint. C. F. Roeser, vice president of the Planning and Coordination Committee will speak on "Production Under the Code." Paul G. Blazer, president of the Ashland Refining Co., Ashland, Ky., will speak on "Refining Under the Code." B. L. Majewski, member of the Planning and Coordination Committee, will speak on "Marketing Under the Code." W. J. Brundred, Oil City, Pa., will speak on "Problems of Stripper Well Operators Under the Code."

A meeting of the stripper well committee of the association and representatives from the various stripper well associations throughout the country will be held Wednesday, May 16, at the Mayo Hotel, in Tulsa, to discuss important matters affecting operators of wells of settled production.

### HEARINGS ON CONTROL BILL

WASHINGTON, D. C., May 15.—Senate hearings on the administration's measure to control crude oil production, introduced by Senator Thomas of Oklahoma, will start next Monday. Each side will be limited to three hours. Congressman Disney of Tulsa is expected to introduce the revised bill in the House on Thursday.

### ALL OLD ORDERS VOID

OKLAHOM ACITY, Okla., May 12.—The Oklahoma supreme court in the case of the H. F. Wilcox Oil & Gas Co. vs. the Oklahoma Corporation Commission handed down a decision declaring void all orders of the Corporation Commission prior to April 10, 1933.

### MAGNETIC STORM

The Tucson, Ariz., observatory of the U. S. Coast and Geodetic Survey report a moderate magnetic storm started at 2 p. m. (C.S.T.) on May 11 and ended at 3 a. m. (C.S.T.) May 12. Telegram follows:

"Storm began eleventh. Twenty. Moderate; ended twelve, nine."

# Cleaning Out With Compressed Air in Oklahoma City Field Proves Success

Among the many problems now facing the producers in Oklahoma City Field is how to clean out the deep wells economically. This has been solved by the engineers of the Indian Territory Illuminating Oil Co. by cleaning out with compressed gas, a method that was worked out some years ago for the shallow fields but which had never before been applied to wells of such depth.

According to C. E. Wright, engineer of the I. T. I. O. Co., 17 wells have been cleaned out with uniform success at much less time and expense than with any other method that had been used heretofore. High pressure gas is forced into the well through the tubing which has a special jet-bit at the bottom. This mixes the cavings with the oil in the hole and flows it out into the gas separator. Thus the well is continued on production and the gas is returned to the gasoline plant while cleaning out is going on. As the cavings are flowed out, the tubing is lowered until the well is cleaned to bottom. As much as 180 feet of cavings have been flowed out within three hours' time. After the tubing has been bottomed, flowing is continued until the well is thoroughly cleaned of cavings.

The I. T. I. O. Co. is working under license of the Dunn & Carmichael patents held by the Air Cleaning & Reaming Corp. of Tulsa. Complete control of this company and the valuable patents owned by it has recently been acquired by the firm of Dunn & Lewis and Earl G. Hastings and A. S. Jones of the Jones Oil Well Reamer Co. The company is planning an active campaign to interest producers in using this process both in the deep and shallow pools. They are providing adequate service to licensees and plan to interest contracting firms to clean out wells in Oklahoma City and other fields.

Cleaning out with compressed air or gas is an invention of I. L. Dunn of Tulsa who first applied it to wells in the Marietta district of Ohio. In 1925 the process was introduced into Oklahoma. As there were at that time no air-gas lift plants and but few repressuring plants, it was necessary to demonstrate with portable compressors. Since that time cleaning out has continued from stationary repressuring and air and gas lifting plants, one company alone having cleaned out some 350 wells by this process at a fraction of the cost of other methods.

With the many repressuring plants and air and gas lift plants, there are now facilities for cleaning out in many fields. It is expected that much cleaning out will be done within the next few years as many wells have been neglected during the low prices of recent years.

# Bureau of Mines Report on Petroleum and Refined Products for March

According to reports received by the Bureau of Mines, Department of the Interior, the production of crude petroleum in the United States during March, 1934, totaled 75,548,000 bbls. This represents a daily average of 2,437,000 bbls., which is 99,000 bbls. above the daily average of February and 8,000 bbls. above March a year ago. The majority of the states showed a gain in daily average production in March, with the four leading states, Texas, Oklahoma, California and Kansas, accounting for all but 7,000 bbls. of the increase over February. The daily average output in Texas in March was 1,022,000 bbls. the first time since October, 1933, that the 1,000,000-bbl. mark has been exceeded. Production in the East Texas field rose to 500,000 bbls daily from an average of 470,000 bbls. in February. The increases in production in Oklahoma and California were well distributed throughout the various producing districts. Daily average production in Kansas increased to 131,000 barrels from 115,000 bbls. in February, which, on a percentage basis represents the largest increase of any important producing state.

The trend in stocks of refinable crude, which had been downward, was reversed in March, when the total for such stocks increased approximately 2,400,000 bbls., compared with a decrease of about 2,000,000 bbls. in February. In general, this change was a reflection of the increase in production not compensated by a comparable gain in refinery runs.

Refined products: The percentage yield of gasoline in March (42.6 per cent) was practically the same as in February, hence the decline in crude runs was reflected in a decrease in the daily average production of motor fuel of from 1,108,000 bbls. in February to 1,076,000 bbls. in March. The daily average indicated domestic demand for motor fuel for March was 985,000 bbls. an increase of 8 per cent over a year ago. Exports of gasoline continued to increase, the total for March, 2,540,000 bbls., being 7 per cent above exports of March, 1933. Stocks of motor fuel on a revised basis totaled 66,191,000 bbls. on March 31; of this amount 62,265,000 bbls. was finished gasoline and 3,926,000 bbls. was natural gasoline. These data indicate a net gain of 287,000 bbls. in motor fuel stocks in March.

The March statistics for the minor products indicate a continued high consumption in fuel oil, further material reductions in fuel oil stocks, and further increases in stocks of wax.

According to the Bureau of Labor Statistics, the price index for petroleum products during March, 1934, was 48.7, compared with 50.3 in February and 33.1 in March, 1933.

The refinery data of this report were compiled from refineries with an aggregate daily recorded crude oil capacity of 3,440,000 bbls. These refineries operated during March at 67 per cent of their capacity, given above, which compares with a ratio of 69 per cent in February.

## Submarine Pipe Lines Eliminate Land Lines

(Continued from Page 30)

Co. installed the first submarine pipe line at Elwood by laying 4,000 feet of 10-inch in June, 1929. Coincident with the laying of this line, the company erected several 80,000-bbl. tanks for storage purposes and to facilitate tanker loadings. Barnsdall and Rio Grande are jointly developing several properties in the Elwood Field although actual drilling and production activities are done by Barnsdall Oil Co. Rio Grande Oil Co. takes the oil and moves it to its Vinvale refinery in southern California or disposes of it in some other manner. Subsequent to the installation of Rio Grande's submarine line at Elwood, Bankline Oil Co. undertook similar work and laid 3,800 feet of 10-inch pipe.

### Construction Work

Aside from special engineering work necessary because of unusual conditions, all submarine pipe line work is more or less similar in nature. In the laying of Associated's 16-inch submarine line at Ventura, the pipe was made up on shore in strings about 1,100 feet long and given three coats of protective covering. The launching ways were constructed of two 6-inch by 8-inch timbers about 12 inches apart, resting on 2-inch by 12-inch sleepers. These sleepers were placed under the joints of the 6 by 8-inch timbers and averaged about 8 feet apart, the joints of the 6 by 8-inch timbers being staggered. Slides, constructed of 2-inch by 12-inch lumber, with 2-inch by 4-inch guides placed 20 feet apart were constructed on the 6 by 8-inch base. Pipe dollies were used for lining up the pipe and rolling the pipe during welding operations. By using these dollies, it was possible to make up each 1,100-foot string without an overhead weld. It was essential that the lengths of pipe be made up absolutely straight and this was done by using a lineup clamp for holding the lengths together for tack welding.

The first string of pipe was made up directly over the launching ways and the other strings were made up parallel thereto as this permitted them to be rolled on the ways by use of pinch bars. A sled was attached to the outboard end of the first string to keep the pipe from fouling the floor of the ocean and a towing clamp was fastened to the pipe about 4 feet from the outer end to which the towing cable was attached. The launching was accomplished by the towing engine aboard a barge which was anchored offshore in line with the launching ways. In most cases, the towing is done by either a tanker or tug. After the first string had been pulled out, the second string was placed on the ways and welded to the first and so on until the entire submarine line was pulled into its final position. A clamp, with a link on each side, was bolted to the inboard end of each string about 75 feet from the end. As the end of each string approached the shore, cables were hooked into the links of the clamp and thus the pipe was held in place until the following string was welded on. The outboard end of the first string was blind flanged and after the entire line was pulled into place the blind flange was removed by a diver thus allowing the pipe to fill with water. An insulating flange was installed in the line about 200 feet inshore from the high water line to arrest any current flow of water.

## Late Fields

### GULF COAST

HOUSTON, Tex., May 15.—Possibilities were favorable for another new producing area for the Gulf Coast of Louisinna when Shell Petroleum Corp.'s No. 1 Kratzer at Roanoke, in Jefferson Davis Parish, on a drill stem test from 8,659-77 feet built up 70 pounds pressure in 12 minutes and recovered 5½ bbls. of 37 gravity pipe line oil with no water. It had cored to 8,682 feet and was preparing to run a Schlumberger test. If it proves productive it will be the deepest producer on the Gulf Coast. It is about a mile north of Humble's No. 2 DeVilbiss, abandoned at total depth of 8,423 feet.

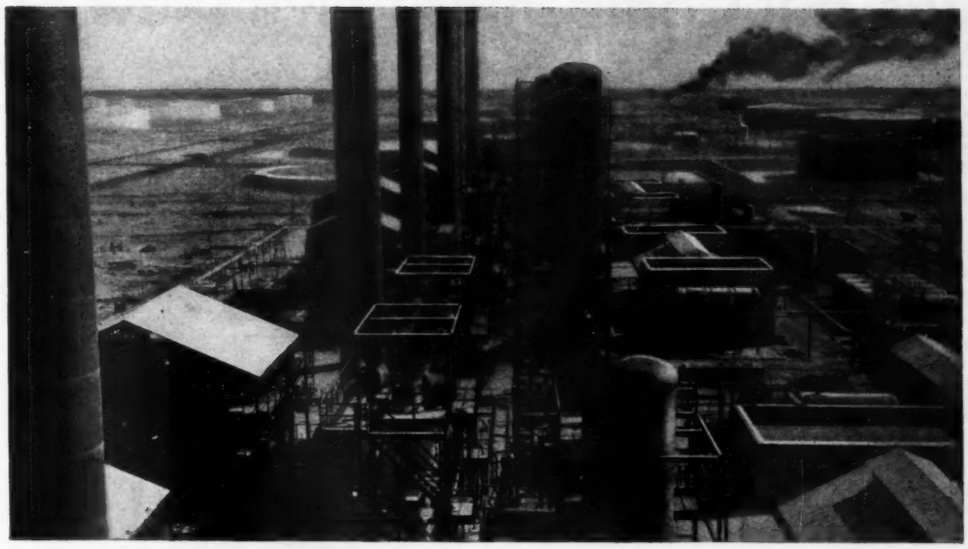
### OKLAHOMA

The status of the labor situation in the Oklahoma field as of Tuesday, May 15, was this: All Sinclair Prairie employes in the Greater Seminole area were back to work excepting striking machinists and boilermakers, numbering abou 60. Negotiations are on between these groups and Sinclair Prairie officials. Representatives of the Indian Territory Illuminating Oil Co. and of the company's union employes in three districts, held a meeting in Oklahoma City on Monday.

The Shell Petroleum Corp.'s No. 1, C NW SW Section 28-20-2w, Lucien Pool, Noble County, was shot in the second Wilcox sand and the well made 1,280 bbls. in 24 hours. Later it flowed 1,390 bbls. by heads in 24 hours. Sands lie at 4,951-5,012 feet and 5,070-5,107 feet.

### CHAPLIN-FULTON HEAD DIES

William McKee, president of the Chaplin-Fulton Manufacturing Co., Pittsburgh, Pa., died recently.



# PROCESSING 10,000 barrels per day of PERSIAN TOPPED CRUDE

**LICENSES granted under United States and Foreign Patents for: Cross • de Florez • Holmes-Manley • Tube and Tank Cracking Processes and Combination Cracking Units.**

***Licensing Agents:***
**The M. W. KELLOGG CO.**
**225 Broadway · New York**
**or its**
***European Representative:***
**Compagnie Technique des Petroles · 134 Boulevard Haussmann · Paris, France**

A refinery in Persia has four large cracking plants, each having a rated capacity of processing 10,000 barrels per day of Persian topped crude and operating under the broad licensing rights of Gasoline Products Company.

Gasoline Products Company offers refiners cracking units designed to employ any or all of the outstanding features of the Cross, de Florez, Holmes-Manley and Tube and Tank processes, thus assuring the refiner a cracking installation of sufficient flexibility to fulfill his particular requirements.

Naturally, before making a decision involving cracking equipment, it is essential to select an organization whose background, experience and licensing rights covering cracking processes are broad enough to assure an efficient and successful installation.

We suggest you investigate this broad and comprehensive service before investing in cracking equipment.

## GASOLINE PRODUCTS COMPANY

INCORPORATED

GASOLINE PRODUCTS CO. INC.

11 COMMERCE STREET · NEWARK, NEW JERSEY

# Directory of Exhibits 1934 Petroleum Exposition Indicates All Companies Have New Products

That the manufacturers of machinery and equipment used in the Petroleum Industry have been active during the past three years is exemplified quite clearly by the fact that over 95 per cent of the exhibits shown at the 1934 International Petroleum Exposition are either entirely new or greatly improved devices. The conditions created during the period of low-priced oil and general curtailment of income have been turned to good advantage by all manufacturers through their study and development of things better suited to perform various duties in every branch of the oil industry.

There are more than 475 exhibits at this year's oil show and every variety of product used in the oil business is shown. To assist the visitor or the exhibitor in finding any exhibit on the grounds the following directory has been compiled which gives the location of the exhibit, the name of the company and the names of those in attendance. A brief description of the display follows. This is not intended as a complete catalog of all items shown because a complete listing would involve a much larger directory than space would permit.

### A. C. SPARK PLUG CO.

**Booth 47, California Bldg.**

The A. C. Spark Plug Co., Flint, Mich., is exhibiting in Booth No. 47 in the California Building with R. E. Merrell, L. H. Wyatt and E. P. Poynor in attendance.

The exhibit features spark plugs, oil filters, air cleaners, spark plug cleaner, instrument panels, fuel pumps, reflex signals and Remo (carbon remover).

In addition to the regular products listed above there is also on display three-fourths-inch bushings for use with 14-millimeter spark plugs, specially recommended for pumping machines and developed for oil field use. Also for some automobiles.

### ADVERTISING NOVELTIES CO.

**Booths 3-4-5, Refiners & Marketers Bldg.**

The Advertising Novelties Co., Inc., Tulsa Hotel Display Rooms, Tulsa, is exhibiting in Booths 3, 4 and 5 in the Refiners & Marketers Building, with Dan Roods, E. C. Hieneman, C. R. Graham, G. H. Coulter, Blair R. Laughlin, and E. G. Jacobus in attendance.

The exhibit features Palm Brothers Decalcomanias; Compton & Sons Lithography, pennants, banners, 24 sheets, display materials; Massillon-Cleveland, Akron signs; Lion Matches, feature matches; American Tag Co., tags, labels; Autopoint pencils; Eberhard Faber pencils; Woodward Tiernan, co-operative calendars; Metal Arts Co., identification badges, bronze plates, service pins, safety awards; Crawford tire covers; Greenduck buttons, badges, coins; Wescott & Root, yardsticks, rulers, gas gauges, and paint paddles; U. S. Playing Cards, advertising special back playing cards; Spotswood, needle books, kids' toys, household specialties; HiFlier and Jolly Boy kites, advertising specials; and Parisian Novelty celluloid accessories, buttons, cards and oil drain tags.

Our exhibit will be an accumulation of most types of advertising accessories used by oil companies in their marketing organization and station equipment. We will feature many of the new types of advertising accessories for the various requirements, and will show applications of these mediums to successful use.

### AHLBERG BEARING CO.

**Booth 6, California Bldg.**

The Ahlberg Bearing Co., 317 East Twenty-ninth Street, Chicago, Ill., is exhibiting in Booth 6, California Building, with F. O. Burkholder, B. J. Baker, O. K. Wright, F. S. Barkdoll, and C. G. Stone in attendance.

The exhibit features the Ahlberg Bearing Co.'s complete display of New CJB Master ball bearings in single row, double row, angular contact and selfaligning series.

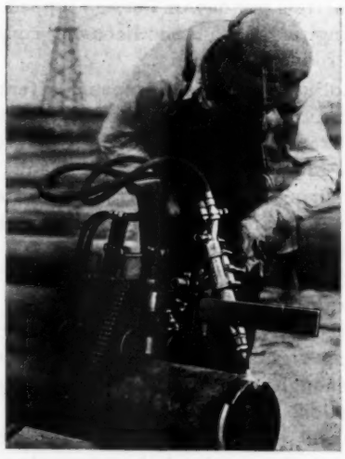
In addition to this, it is featuring the Ahlberg Ground Process which is a method by which worn bearings removed from an application only because of natural wear are again made suitable to render service equal to that of the bearing originally.

### AIR REDUCTION SALES CO.

**Booths 30-34 and 108 Oklahoma Bldg.**

The Air Reduction Sales Co., 60 East Forty-second Street, New York, is exhibiting in Booths 30 to 34 and Booth 108 in the Oklahoma Building, with G. Van Alstyne, J. F. Pryor, W. H. Ludington, H. W. Reade, V. Forgett, D. Llewellyn, W. Mike Murphy, A. H. Yoch, all of New York; P. S. Julian, W. L. Judd, R. R. Thompson, G. E. Cornelious, of Oklahoma City; R. W. Reeves, Tulsa; E. L. Wilkins, Houston, Tex.; G. F. Dickens, J. L. Ragle, Kansas City, Mo.; O. F. Wilkinson, St. Louis, Mo., and Don Williams, Los Angeles, Calif., in attendance.

The exhibit features Aircowelding, a combination of a special alloy rod and a simplified oxyacetylene welding technique



developed by AIRCO research laboratories specifically for pipe lines.

The AIRCO No. 1 pipe cutting and beveling machine will be demonstrated showing single torch operations as well as two torches cutting couplings from pipe. The Airco portable tensile and bend testing machine permits qualification tests of welders right on the job.

The new Airco Portable 50-pound Acetylene generator with truck will be displayed for the first time to the petroleum industry.

Airco oxygen acetylene Airco-DB hand welding and cutting apparatus and supplies will be displayed and demonstrated.

National Carbide will be exhibited in Booth 30.

Wilson Welder & Metals Co. will demonstrate the new Wilson electric arc welding machine in Booth 34.

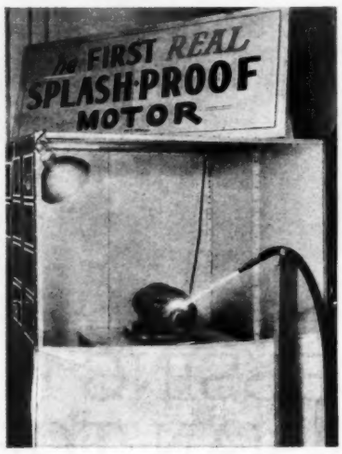
Hardfacing operations on oil well tools will be conducted with Stoody rods.

Metalayer demonstrations will be conducted in Booth 108 by the Metals Coating Co.

### ALLIS, LOUIS, CO.

**Booth 46, Texas Bldg.**

The Louis Allis Co., 427 East Stewart Street, Milwaukee, Wis., is exhibiting in Booth 46 in the Texas Building, with L. F. Keely and W. Woobank, Tulsa representative in attendance.




The exhibit features explosion-proof fan-cooled motors, splash-proof weather-proof motors (originated by The Louis Allis Co.).

Explosion-proof motor, approved by Underwriters for hazardous locations, will show flame quenching features which prevent escape of flames from any internal explosion. Eliminates fire walls and insurance penalties on nonapproved motors. Used in refineries, gasoline and bulk plants.

Splash-proof weather-proof motor will be operated under stream of water, squirted from all angles. Will show baffles preventing splashing from entering motor winding and "shaft guard" preventing water from entering bearing through shaft opening. Eliminates housings over motors installed outdoors. Permits good engineering. Used for oil pumping rigs, screens, and other outdoor and wet applications.

### ALLIS-CHALMERS MANUFACTURING CO.

**Booth 79, Oklahoma Bldg.**

The Allis-Chalmers Manufacturing Co., Milwaukee, Wis., is exhibiting in Booth 79 in the Oklahoma Building, with D. M. McCargar, manager, and Oscar Haas, of the Tulsa office, in attendance.

The exhibit features an extensive line of motors, Texrope drives and rotary compressors including the lately developed gas-electric direct-current equipment for rotary drilling; the Rannet pipe line electric pump, a complete self-contained fluid-cooled motor for outdoor pipe line installation; explosion-proof motors and applications of pumps for field service, pipe lines and refineries.

### ALLIS-CHALMERS MANUFACTURING CO. FRED E. COOPER

**Blocks B and D on Grounds**

The Allis-Chalmers Manufacturing Co., Milwaukee, Wis., Fred E. Cooper, Tulsa, tractor distributor, is exhibiting in Blocks B and D on the grounds, with H. C. Merrit, general manager tractor division, Milwaukee; E. L. Kirkpatrick, branch manager, Wichita, Kans.; E. Ellzey Brown, advertising manager, Milwaukee; E. G. Hulse, industrial manager, Wichita; H. J. Yoakum, branch manager, Dallas, Tex.; and Fred E. Cooper, H. B. Bloxom, F. F. Ferguson, J. W. Allen, A. G. Bailey, C. A. Baird, C. F. Nelson, B. S. Scott, and T. J. Spikes, of Tulsa in attendance.

The Allis-Chalmers (Fred E. Cooper) exhibit will show A-C Model "M" Tractor, A-C Model "K" Tractor, A-C Model "L" tractor, Allis-Chalmers crawler tractors for oil field and general tractor work. Built in three sizes.

A-C 4—"M" power unit, A-C Model "E" power unit, A-C 6—"L" power unit. Allis-Chalmers 4 and 6 are sturdy, heavy-duty tractor motors, with maximum cooling capacity. For heaviest stationary work. Made in five sizes.

Allis-Chalmers tracks, very rugged, serviceable tracks for all makes of crawler wagons. They will wear longer, pull easier, and are self-cleaning.

Allis-Chalmers "UM" winch tractor holds the world's speed record (64.28 m.p.h., driven by Barney Oldfield), very powerful, sturdy and easy to operate.

A-C Model "UM" winch tractor built as a complete unit—30 m.p.h. road speed; powerful, simple, easy and economical to operate.

A-C "UM" 4 or "U" 6 skid winch made in five sizes, for truck or trailer mounting. A size to meet every oil field need.

Rumely Doall skid winch very compact, powerful and rugged in construction and light in weight. Will handle easily wells up to 3,000 feet in depth of 2-inch tubing. Can be hauled on the smallest truck or trailer.

### ALLSTEEL PRODUCTS CO.

**Block F, on Grounds**

The Allsteel Products Manufacturing Co., Wichita, Kans., is exhibiting in Block F on grounds, with H. W. Cardwell, R. B. Gilmour, H. S. Chancey, H. W. Cardwell, Jr., R. B. Chapin, and William Guier in attendance.

The exhibit features nine sizes and models of oil well servicing portable drawworks and pipe line booms. The most unique of them all being the combination double drum unit with spudder, which is an all-purpose oil well servicing unit. This unit is made in three sizes, for wells of from 2,000 to 7,000 feet in depth. It is a portable drawworks, with a spudding attachment with which a well may be spudded in, drilled in with standard tools after rotary hole is made, do fishing jobs, cleaning out, swabbing or bailing and still light enough to be moved on a small truck.

### ALUMINUM CO. OF AMERICA

**Booths 45 and 60, Refiners and Marketers Bldg.**

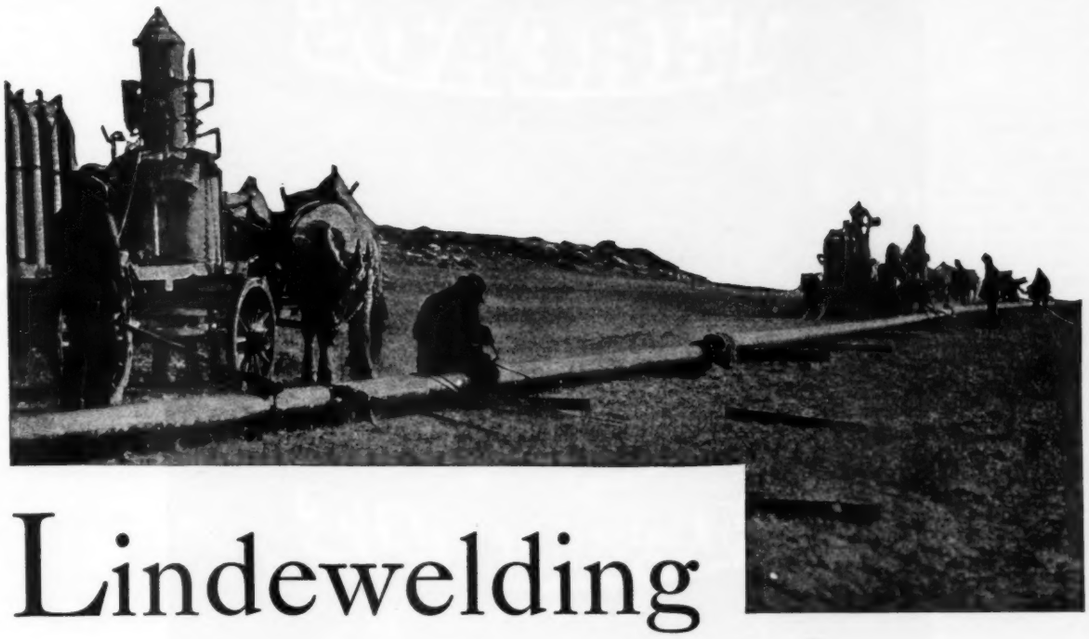
The Aluminum Co. of America, Gulf Building, Pittsburgh, Pa., is exhibiting in Booths 45 and 60 in the Refiners and Marketers Building, with E. B. Wilber in attendance.

The exhibit features two aluminum products, Goldy tamper-proof aluminum seals for oil bottles, and the new Alcoa Albron paste for aluminum paint.

A sealing machine will be in operation for demonstrating how the aluminum seals are put on glass bottles, and sealed bottles will be on display to show the seal must be destroyed before it can be removed. The oil bottles used for the demonstration will be those produced by Owens-Illinois Glass Co. for Shell Eastern and Ohio Oil Companies.

The new Alcoa Albron paste is a pig-

"WE ORDER EVERYTHING FOR PIPE LINE WELDING FROM LINDE"



# Lindewelding *made time* for this Contractor

HE had the signed contract, and had hired the crew. The pipe was strung out. The line had to be finished on time.

This contractor then sought the assistance of the Linde organization in training welders in Lindewelding.

Such aid is a feature of Linde Process Service.

After two days training the whole firing line was Lindewelding. The daily reports tell the story: first day, 93 welds; second day, 193 welds; third day, 210 welds; fourth day, 218 welds; fifth day, 273 welds. And when the Lindewelding got up to full speed, the cost per joint became unbelievably low.

Pipe line contractors all over the country can tell of similar incidents in which Linde Process Service has helped them to organize their welding operations for greater speed, dependability and profit. This is why so many of them buy *everything for pipe line welding from Linde.*

Let the nearest Linde District Office give you the latest data on Lindewelding and show you how Linde can be of assistance to you.

## THE LINDE AIR PRODUCTS COMPANY

*Unit of Union Carbide and Carbon Corporation*

126 Producing Plants UCC 627 Warehouse Stocks

IN CANADA, DOMINION OXYGEN CO., LTD., TORONTO

LINDE OXYGEN • PREST-O-LITE ACETYLENE • OXWELD APPARATUS AND SUPPLIES • UNION CARBIDE

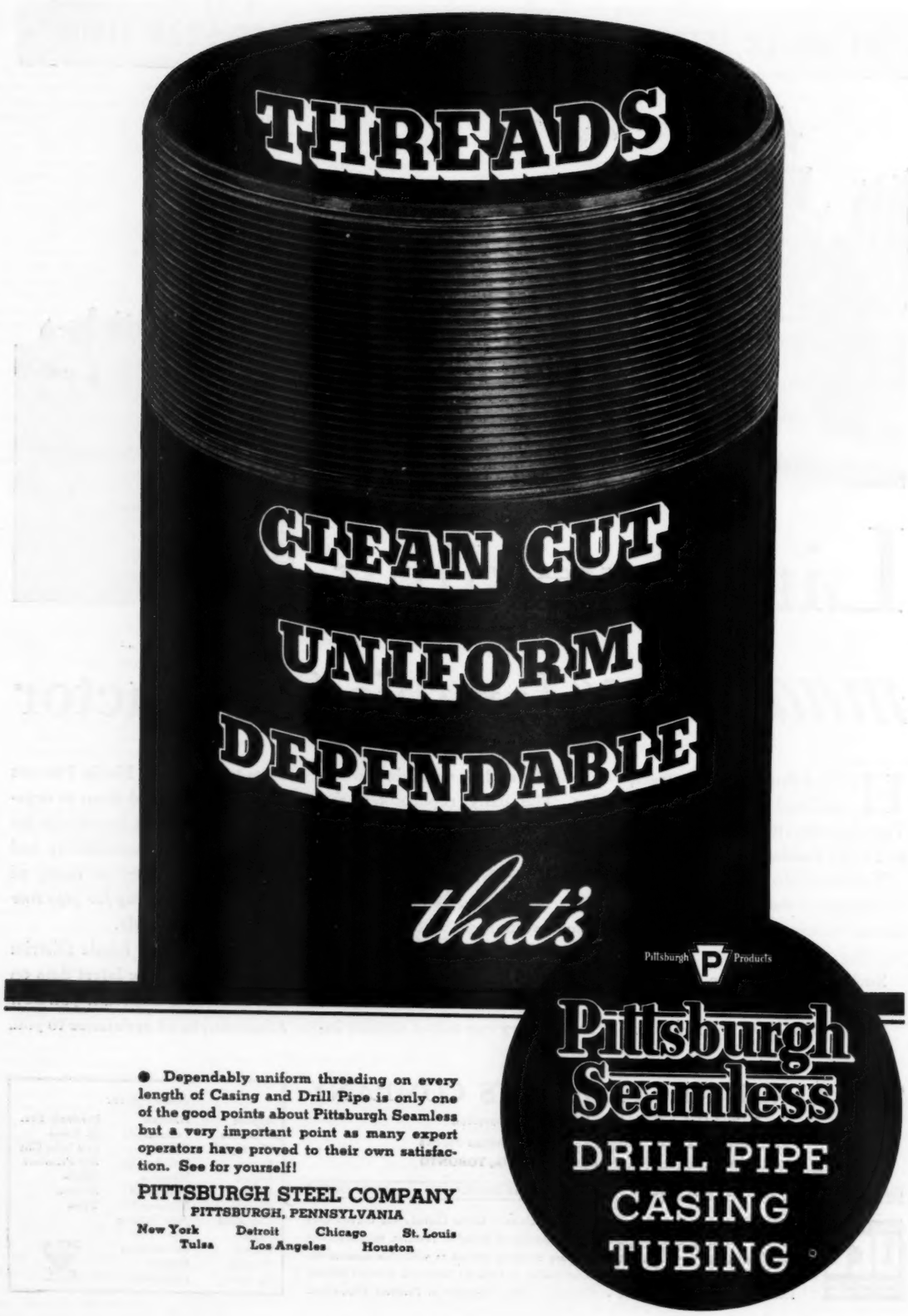
PRODUCT OF A UNIT OF UCC UNION CARBIDE AND CARBON CORPORATION

Users of products and processes developed by Units of Union Carbide and Carbon Corporation benefit from a most unique coordination of scientific research with manufacturing, sales and service facilities. You are cordially invited to visit this summer the numerous exhibits sponsored by the Corporation in both the Basic and Applied Science sections in the Hall of Science at Chicago's 1934 A Century of Progress Exposition.

*Sales Offices:*

| | | |
|---|---|---|
| Atlanta | Houston | Portland, Ore. |
| Baltimore | Indianapolis | St. Louis |
| Birmingham | Kansas City | Salt Lake City |
| Boston | Los Angeles | San Francisco |
| Buffalo | Memphis | Seattle |
| Butte | Milwaukee | Spokane |
| Chicago | Minneapolis | Tulsa |
| Cleveland | New Orleans | |
| Dallas | New York | |
| Denver | Philadelphia | |
| Detroit | Phoenix | |
| El Paso | Pittsburgh | |

NRA




● Dependably uniform threading on every length of Casing and Drill Pipe is only one of the good points about Pittsburgh Seamless but a very important point as many expert operators have proved to their own satisfaction. See for yourself!

PITTSBURGH STEEL COMPANY
PITTSBURGH, PENNSYLVANIA
New York Detroit Chicago St. Louis
Tulsa Los Angeles Houston

ment for aluminum paint, used in the same manner as dry aluminum bronze powder. The aluminum in the paste is more finely divided than that used for the "standard varnish" grade of powder and therefore produces a smoother, brilliant paint that is rather white in color. Aluminum paint made with Alcoa Albron paste has excellent durability and hiding power. It is also said that the covering power of aluminum paint made with this paste is somewhat greater than that made with powder.

A demonstration will be set up to show how aluminum paint "leafs." Visitors will be invited to look through a microscope so that they may actually see the swirling of the aluminum flakes and the formation of the "leafed" film as aluminum paint is applied on a surface.

Various other new and interesting aluminum products used in the petroleum industry will be on display.

### ALUMINUM SEAL CO.

**Booths 45 and 60, Refiners and Marketers Bldg.**

The Aluminum Seal Co., Fourteenth Street, New Kensington, Pa., is exhibiting in Booths 45 and 60 in the Refiners and Marketers Building, with D. H. Tilson, sales manager; E. A. Williams, E. A. Grosch, and N. L. Olsen in attendance.

The exhibit features Tamper-proof Goldy oil bottle seals and machinery for applying them.

### AMERICAN AIR FILTERS CO.

**Louisville, Ky.**

**Booths 101 and 110, Texas Bldg.**
With Hanlon-Waters, Inc.

### AMERICAN ARCH CO.

**Booth 77, Texas Bldg.**
Exhibit with B. W. Vinson Co.

### AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS

**Booth 23, Scientific and Technical Bldg.**

The American Association of Petroleum Geologists, Tulsa, occupies Booth 23 in the Scientific and Technical Building, with J. P. D. Hull in attendance.

The exhibit features educational charts about the American Association of Petroleum Geologists and publications of the association.

### AMERICAN CABLE CO.

**Booth 47, Oklahoma Bldg.**

The American Cable Co., Inc., 81 East Ross Street, Wilkes-Barre, Pa., is exhibiting in Booth 47 in the Oklahoma Building, with C. A. Perryman and R. L. Gormley in attendance.

The exhibit features Trulay rotary drilling lines, standard cable tool drilling lines, sand lines, nonrotating tubing lines, and Korodless stainless steel ropes. Also exhibit illustrating process of manufacture of rope.

### AMERICAN CAN CO.

**Booths 24-25, Refiners and Marketers Bldg.**

American Can Co., 230 Park Avenue, New York, is exhibiting in Booths 24 and 25 in the Refiners and Marketers Building, with M. J. Eberhart in attendance.

The exhibit features a complete exhibit of the Canco method of lubricating oil dispensing. A large electrically illuminated wall map will show the American Can Co.'s extensive coverage of the nation with plants and sales offices. There will be a large exhibit of the actual cans now being used to merchandise lubricating oil by dozens of the largest oil marketers as well as all types of Canco dispensing equipment and display racks. Large photographs of actual canned oil installations in the largest refineries will be prominently displayed.

### AMERICAN FORK & HOE CO.

**Gates Hardware Co. Bldg.**
**Outside Space on Grounds**

### AMERICAN GLYCERIN CO.

**Outside Space on Grounds.**

The American Glycerin Co., Wilmington, Del., is exhibiting in outside space on grounds west of Block E with Paul F. Lewis in attendance.

The exhibit features well shooters—automobile equipped with torpedo reeling equipment designed by American Glycerin Co. Also the King time bomb and an assortment of torpedo shells and well-shooting paraphernalia.

The shooter's truck is equipped with self-contained and operated machinery and designed to simplify the shooting operation. Reels are geared to an hydraulic pump system and the gauge on the hydraulic system positively indicates fluid levels, gas pockets, obstructions and bottom. The Measuremeter measures the torpedo line into and out of the hole and indicates the exact position of the torpedo at all times.

### AMERICAN HAMMERED PISTON RING CO.

**Booth 133, Texas Bldg.**

The American Hammered Piston Ring Co., Baltimore, Md., is exhibiting in Booth 133 in the Texas Building, with John A. Worthington, E. S. Freeman and Harry Nolan in attendance.

The exhibit features 40 different types of piston rings used in oil country Diesel engines, steam engines, pumps and compressors. Several types have never been exhibited before. Also new types recently developed for use in high speed Diesel engines.

### AMERICAN IRON & MACHINE WORKS CO.

**Booths 86-87, Oklahoma Bldg.**

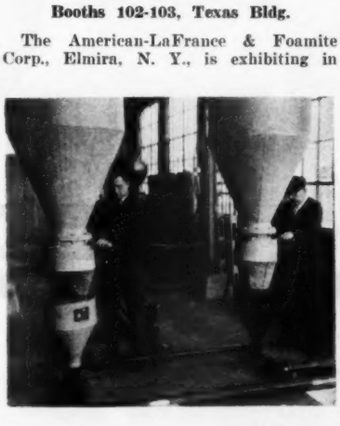
The American Iron & Machine Works Co., 518 North Indiana Street, Oklahoma City, Okla., is exhibiting in Booths 86 and 87 in the Oklahoma Building, with Earl W. Miller, John R. Riley, P. K. Ridge, G. C. (Red) Ross, F. M. Owen, B. E. Fox, P. M. Rea, and Fred Ryals in attendance.

The exhibit features the following articles of new equipment manufactured by this company and marketed under the trade name "American": Gas generator, steam lubricator, tie down flange, safety packing flange, wild well capping device, casing suspender, shot packed barrel, side tracking mills, paraffin bit, break-out block, adjustable steel rig brace, automatic cathead, drill pipe float joint, circulating and releasing overshot, wall hook, liner puller, telescope joint, combination reverse and throttle lever, milling tools, die nipple, tapered tap, flow packer, milling shoes, rotary shoe, cone fishing socket, releasing and circulating spear, release valve, rotary and overshot subs, fishtail bits, surface bit blades, flexible coupling and steel tool house.

### AMERICAN-LA FRANCE & FOAMITE CORP.

**Booths 102-103, Texas Bldg.**

The American-LaFrance & Foamite Corp., Elmira, N. Y., is exhibiting in



Booths 102 and 103 in the Texas Building, with Donald D. Fitzgerald, Houston, Tex.; E. F. Vegel, J. A. Hartz, and C. V. Dailey in attendance.

The exhibit features a full line of fire extinguishers including the foam, soda-acid, vaporizing liquid and antifreeze types. Everything from small hand extinguishers to large ones on wheels will be shown. Also a wide variety of foam generating dry powder equipment such as carbon dioxide battery and various types of gas masks will be on display.

A Foamite bin for the storage of dry powder used in the Firefoam generating system will be shown. The bins are made in a wide range of sizes in two types, the stationary in which the bins are mounted driectly over the hoppers on I-beams supported by the building, and the movable type mounted on trolleys which permit the powder supply to be stored in several smaller size bins.

Special literature describing each piece of equipment will be available for those interested.

### AMERICAN LUBRICATOR CO.

**Dallas, Tex.**
**Booth 42, California Bldg.**

### AMERICAN METAL HOSE CO.

**Waterbury, Conn.**
**Booths 29 and 30, Texas Bldg.**

### AMERICAN ROLLING MILL CO.

**Booth 70, Oklahoma Bldg.**

The American Rolling Mill Co., Middletown, Ohio, is exhibiting in Booth 70, Oklahoma Building with R. E. Walker and H. D. Neill in attendance.

The exhibit features an assembly of Armco Spiral Welded Pipe illustrating the ease and economy with which this type pipe can be assembled to conform with intricate piping layouts using standard pipe couplings and field welding.

A display of ARMCO spiral welded pipe sections showing the complete range of pipe diameters will also be made at the booth.

### AMERICAN STEEL & WIRE CO.

**Booths 117-118; Oklahoma Bldg.**

The American Steel & Wire Co., 208 South La Salle Street, Chicago, Ill., is exhibiting in Booths 117 and 118 Oklahoma Building with C. F. Wiley, A. J. King, J. V. McGinty, G. F. Bell, T. A. Goggin, H. R. Klein, G. White, R. E. Francisco, C. J. McGregor and R. C. Fisher in attendance.

The exhibit features various constructions of wire lines for oil field use with a welding demonstration given in addition.

There will also be on hand a complete selection of welding wires for oil field and pipe line use.

### AMERICAN ZINC INSTITUTE, INC.

**Booth 47, Scientific and Technical Bldg.**

The American Zinc Institute, Inc., 60 East Forty-second Street, New York City, N. Y., is exhibiting in Booth 47 in the Scientific and Technical Building, with George C. Bartells, field representative, Collinsville, Ill., and Charles Matthews, Mineapolis, Minn., in attendance.

This is an educational exhibit to demonstrate the values of heavy zinc coatings on iron or steel. Specimens of service sheets with light and heavy coats will be displayed, also specimens of wire fencing. Models of buildings showing details of construction and application also a model of a Hortonspheroid gas tank will be displayed. Information on proper metal paints to use will be available, also specimens to illustrate their use. A Delineascope projector will be used to show pictorially the different facts we have observed in working out the "seal of quality" heavy coated galvanized sheet program.

### AMES-BALDWIN WYOMING CO.

**Parkersburg, W. Va.**
**Outside Space on Grounds**

### APPLETON ELECTRIC CO.

**Booths 61-62, Refiners & Marketers Bldg.**

The Appleton Electric Co., 1701 Wellington Avenue, Chicago, is exhibiting in Booths 61 and 62 in the Refiners & Marketers Building, with R. V. Hawkins and F. S. Donahue in attendance.

The exhibit features the Appleton Electric Co. conduit fittings, extension reels and other electrical specialties of threaded and no-thread malleable unilets, also its latest and complete line of explosion-proof unilets for use in hazardous locations, as well as aireels, reelites, adaptalites and miscellaneous equipment of this character for use in super-sercice stations.

### ARMSTRONG MACHINE WORKS

**Booth 70, Texas Bldg.**

The Armstrong Machine Works, Three Rivers, Mich., is exhibiting in Booth 70 in the Texas Building, with O. E. Ulrich and George B. Allan in attendance.

The exhibit features a glass model of the Armstrong steam trap operating under 5 pounds steam pressure, as well as forged steel traps and compound or piston operated traps.

### ATHEY TRUSS WHEEL CO.

**Block E on Grounds.**

The Athey Truss Wheel Co., Chicago, Ill., is exhibiting in Block E on grounds with J. A. Roberts in attendance.

The exhibit features a new 40-ton combination oil field wagon, embodying many exclusive features of design. This new wagon, known as the Athey forged-Trak combination oil field wagon is equipped with Athey forged Trak wheels, which, according to Athey officials, offer

mechanical and operating advantages especially adapted to oil field service.

Among these advantages are a positive, non-clogging track which is self-cleaning and remarkably light running. The track structure is so designed that it eliminates motion under load, the greatest single cause of track wear. The raised wheel track stays clean when operating under any condition, and track pins, are sealed against entrance of abrasives.

Other exclusive features include spring mounted chassis, greater load-supporting area, improved type of bunks and reinforced frames.

### E. C. ATKINS & CO.

**Gates Hardware Co. Bldg.**
**Outside Space on Grounds**

### AUTOMATIC VALVE CONTROLLER CO.

**On Grounds North of Continental Supply Co. Bldg.**

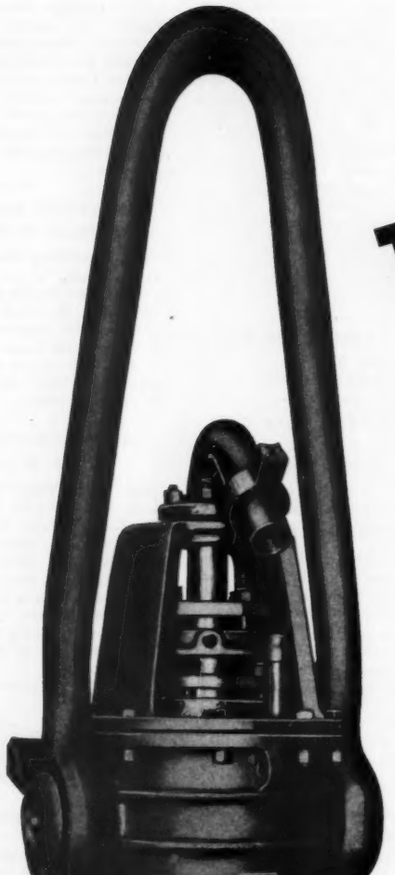
The Automatic Valve Controller Co., Box 268, Tulsa, is exhibiting on the grounds just north of Continental Supply Co. Building, with C. L. Wait and Joe Laley in attendance.

The exhibit features an automatic valve controller that can be mounted on any type of valve in such a way that when a break occurs on a pipe line, the control will close. When the break is repaired and pressure resumed, the control will automatically open valve. The control can be manually operated. Line content operates control. This control is adaptable to river crossings where one or more lines are used. In case of a break, one line is closed and the by-pass line opened.

### AUTOMIXER CORP.

**New York City, N. Y.**
**Booths 43 and 44, Refiners and Marketers Bldg.**

(Continued on Page 65)




# TIMKEN BEARINGS make heavy work light for this "OILWELL" Swivel

Swivel service is an extremely tough job for anti-friction bearings because it involves continuously-imposed thrust loads of the severest character. It is just one of many tough oil field jobs Timken Tapered Roller Bearings have licked.

Timken Bearings are so closely connected with dependable performance, economical operation, long life and low maintenance that careful oil field operators invariably look for "Timken Bearing Equipped" when buying any type of drilling, pumping and auxiliary equipment.

THE TIMKEN ROLLER BEARING COMPANY, CANTON, OHIO

Tapered Roller TIMKEN BEARING EQUIPPED

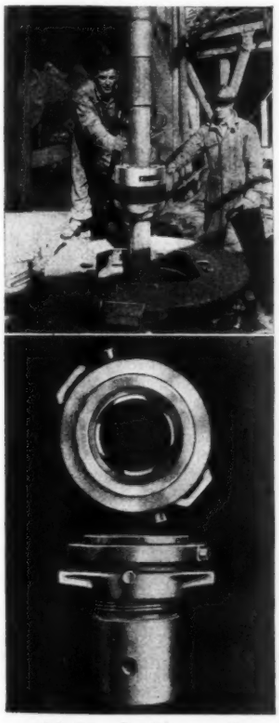
"Oilwell" No. 150-A Oil Bath Swivel. Weight, 3790 pounds. Capacity, 150 tons. Designed for heavy duty deep well drilling.

TIMKEN Tapered Roller BEARINGS

### BAASH-ROSS TOOL CO.
**Booth 69, Texas Bldg.**

The Baash-Ross Tool Co., Los Angeles, Calif., with warehouses and sales offices in Oklahoma City, Okla., Houston and Beeville, Tex., is exhibiting in Booth 69 Texas Building, with L. F. Baash, Erwin Burns, A. F. Brown and W. E. Bendeler in attendance.

The exhibit will feature many working models of Baash-Ross tools in addition



to a miniature derrick, complete with table and drawworks, for demonstrating the actual performance of various perforators, casing and drill pipe cutters, jars and spears.

An interesting model of the Baash-Ross blowout preventer clearly shows how the blowout preventer body screws into the top casing coupling, with the packing assembly suspended in the derrick ready to be swung instantly around the drill pipe and dropped through the automatic lip ring at the first warning of an impending blowout.

### BAILEY METER CO.
**Booth 60, Scientific and Technical Bldg.**

The Bailey Meter Co., 1050 Ivanhoe Road, Cleveland, Ohio, is exhibiting in Booth 60 in the Scientific and Technical Building, with H. M. Hammond, manager sales and engineering, and C. E. Albert, manager, Kansas City branch office, in attendance.

The exhibit features the latest types of fluid meters, adjustable orifices, controllers and potentiometer pyrometers.

A cutaway Bailey fluid meter, suitable for measuring steam, water, gas or oil, including the escapement type integrator which can be clearly seen in operation.

Bailey adjustable orifices on exhibit insure accurate measurement of variable flows in pipe lines, without the necessity of changing orifice plates or manometer ranges.

An air or gas pressure operated flow controller, the operation of which is controlled by a unique, free floating, pilot valve, which in turn is operated by a Bailey fluid meter, will be a feature of the exhibit.

The new Bailey Galvatron potentiometer pyrometer embodying the electronic-relay circuit, will be demonstrated. The electronic-relay feature of this equipment amplifies contacts from the galvanometer in the thermocouple circuit to drive reversing motors for the operation of slide wire resistances and recording pens.

### BAKER OIL TOOLS, INC.
**Booths 99-112, Oklahoma Bldg.**

The Baker Oil Tools, Inc., Oklahoma City, Tulsa and Houston, Tex., is exhibiting in Booths No. 99-112 in the Oklahoma Building with C. E. Whitney, P. V. McGivern and R. C. Glover in attendance.

The exhibit features the complete line of Baker cement equipment for guiding, floating and cementing casing, including a miniature, moving model of the Baker cement whirler shoe, with side outlets which direct the cement slurry upward with a whirling motion, to secure uniformly successful cementing operations.

A moving model of the Baker rotary wall scraper and demonstration models of the new, improved Bakwik drill pipe float and other Baker products will make the exhibit of interest to all oil men.

### BALDWIN-DUCKWORTH CHAIN CORP.
**Booths 9-10, Texas Bldg.**

The Baldwin-Duckworth Chain Corp., Springfield and Worcester, Mass., is exhibiting in Booths No. 9-10 in the Texas Building with George J. Fix, George J. Fix, Jr., J. H. Turner, T. H. Lankford, D. A. Cant and F. J. Weschler in attendance.

The exhibit features Baldwin 1030 SS and 1240 SS Super series straight side bar chain, API 3 and API 4 standard offset type chain, standard and heavy duty roller chains and steel replacement series heavy duty roller chains.

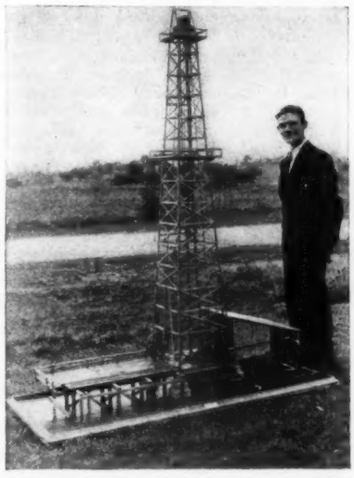
Super series chain is featured. This chain is of straight side bar construction, of rugged design and very easily disassembled in the field for repairs. The chain on exhibit shows the latest staggered pin assembly and represents a major improvement, which, it is said, lengthens chain life and reduces repairs.

### BALDWIN-SOUTHWARD CORP.
**Philadelphia, Pa.**
### DE LA VERGNE ENGINE CO.
**Outside Space on Grounds**

### BAROID SALES CO.
**Booths 125-126, Oklahoma Bldg.**

The Baroid Sales Co., Los Angeles, Calif., is exhibiting in Booths 125 and 126 in the Oklahoma Building, with George L. Ratcliffe, president, and D. A. Sikes, engineer, in attendance.

The exhibit will feature a miniature oil derrick and complete drilling equip-



ment which actually drills holes. This rig stands 7 feet high from floor to gin pole.

"In drilling a test hole with this rig," says George L. Ratcliffe, general manager of the Baroid Sales Co., "all conditions of a regular job were encountered."

"For instance," says Mr. Ratcliffe, "a Kelly bushing was accidentally dropped in the hole, when we were down about 4 feet. We had to send down a basket for it and finally got it. When we were down about 7 feet we decided to ream and in making up the joints, one was not made up tight enough and wobbled off at 6 feet. Then we had another fishing job. So we went down with an overshot and had quite a time getting over the joint because it had fallen into a cavity. We took some good pulls at the joint, but couldn't move it. Then we broke the dogs out of the overshot, came out of the hole, put in new dogs and went down again, this time slipping over the joint without trouble. Then we pulled out under our own power. When the fish came out, there was 6 inches of sand on top. After that we used Aquagel mud to wall up the hole, bring out the cuttings, and prevent the sandy formation from slipping in the hole. After various other troubles, we got down to 8 feet and finally abandoned the hole for lack of capital."

Equipment on the rig includes derrick, crown blocks, traveling blocks, rotary table, drawworks, drums, catheads, clutches, brakes, reduction gear, chains, sprockets, drilling motor, mud pump, swivel, bits, etc., and a Baroco Mud Screen exactly duplicating the larger screen of the same name manufactured by the Baroid Sales Co. All parts function perfectly by electric power.

### BASTIAN-BLESSING CO.
**Booth 62, Oklahoma Bldg.**

The Bastian-Blessing Co., of Chicago, Ill., assisted by its Mid-Continent distributor, Moorlane Co., of Tulsa, and Houston, Tex., is exhibiting in Booth 62 in the Oklahoma Building, with M. J. LaDue and William Fredericks in attendance.

The exhibit features newest developments in the oxyacetylene welding and cutting industry, especially interesting due to introduction of the new Rego GX welding torch which is adaptable to all classes of welding and which promotes economy of operation due to its new style construction. See it, operate it, and be assured that the GX torch is beyond doubt the greatest development to ease the worries of the welding operators.

### BAUSCH-LOMB OPTICAL CO.
**Booth 3, Scientific and Technical Bldg.**

The Bausch & Lomb Optical Co., Rochester, N. Y., is exhibiting in Booth 3 in the Scientific and Technical Building, with L. B. McKinley and J. H. Schering in attendance.

The exhibit features an operating exhibit involving physics and chemistry in the optical measurement of chemicals and the microscopical testing of materials.

Binoculars and magnifiers for the field geologist, wide field binocular microscopes and petrographic microscopes for the identification of foraminifera, chemical microscopes for the study of the melting points of wax crystals, and many other instruments applicable to the industry will be shown.

The new LC Polarizing Microscope, embodying many improvements over the old models, will be a feature of the exhibit. This instrument has a newly designed optical system and is equipped to handle many accessories, and especially fitted to take the Federoff stage.

### BEEBE BROTHERS, INC.
**Outside Space on Grounds.**

The Beebe Brothers, 2124 Sixth Avenue S., Seattle, Wash., is exhibiting in outside space on grounds.

The exhibit features all steel hand hoists.

### BENDIX PRODUCTS CORP.
**South Bend, Ind.**
### With MAGNETO IGNITION CORP.
**Booth 19, Oklahoma Bldg.**

### BENJAMIN ELECTRIC CO.
**Des Plaines, Ill.**
**Booths 37 and 38, Refiners and Marketers Bldg.**

### BIG FOUR FOUNDRY CO., INC.
**Block C on Grounds**

The Big Four Foundry Co., Inc., 216 Thompson Building, Tulsa, is exhibiting on Block C, on grounds, with R. B. Protzman and J. L. Nourse in attendance.

The exhibit features Big Four rotary counterbalance, general castings such as liners, pistons and burners.

### BIG THREE WELDING EQUIPMENT CO.
**Booths 67-68-69, Oklahoma Bldg.**

Big Three Welding Equipment Co., 102 South Cheyenne Street, Tulsa, is exhibiting in Booths 67, 68 and 69 in the Oklahoma Building, with W. B. Whenthoff, C. K. Rickel, A. F. Davis, J. W. Tatum and O. L. Rogers in attendance.

The exhibit features Lincoln Shield-Arc welding machines and supplies with a new remote control device for arc welding machines, known as "Lincontrol," and they may be purchased separately and installed on motor driven, belt driven or gasoline engine welders now in use.

### BLACK, SIVALLS & BRYSON, INC.
**Booths 39-66, California Bldg.**

Black, Sivalls & Bryson, Inc., Oklahoma City, Okla., is exhibiting in Booths 39 and 66, California Building with A. H. Black, J. A. Sivalls, Glenn Skinner, H. E. Partch, G. Raymond, G. E. Peoples, Don Sivalls, J. A. Grubb, W. H. Price, A. A. Arras, A. J. Edwards and M. B. Johnson in attendance.

The exhibit features B. S. & B. safety heads in actual working demonstrations; a working 500-pound improved American separator with newly-designed pilot controlled oil valves; inverse pilot control for automatically shutting down the gas discharge when oil gets high in the separator and B. S. & B. vapor pressure wood tanks full size.

### BLACKMER PUMP CO.
**Grand Rapids, Mich.**
**Booth 56, Refiners and Marketers Bldg.**

### BOILER ENGINEERING CO.
**Newark, N. J.**
**Booth 34, Scientific and Technical Bldg.**

### BOSTON GEAR WORKS CORP.
**Boston, Mass.**
**Outside Space on Grounds**

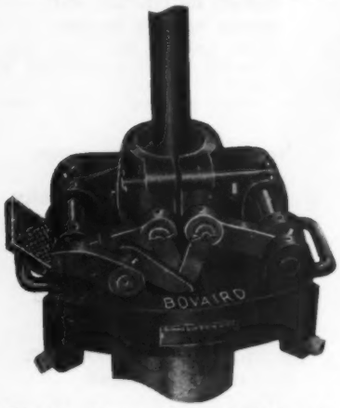
### THE BOVAIRD SUPPLY CO.
**Booths No. 25-26, Texas Bldg.**

The Bovaird Supply Co., 618 Thompson Building, Tulsa, Okla., is exhibiting in Booths No. 25 and 26 in the Texas Building with S. J. Raphel, sales manager and W. M. Bovaird, president; F. D. Bovaird, vice president; D. D. Bovaird, treasurer; R. M. McMahan, secretary and purchasing agent; A. C. Stensgaard, assistant purchasing agent; R. H. Baxter, traffic manager, Tulsa.

D. C. Kennedy, Borger, Tex., R. E.

Batchelor, Chase, Kans., C. V. Dennis, Independence, Kans., V. P. McAnally, McPherson, Kans., F. J. Robbins, Oklahoma City, Okla., J. B. Hubbard, Sapulpa, Okla, and C. A. Black, district manager, Wichita, Kans.

W. H. Sherin, Oklahoma City; L. D. Murray, Oklahoma City; Fred S. Dewel,




Wichita, Kans.; H. A. Binford, McPherson, Kans.; R. D. Burris, Chase, and George Brink, Borger, Tex.

J. P. Tune, Oklahoma City; John Witcher, Sapulpa; Frank Laney, Sapulpa; R. A. Weber, Sapulpa; R. T.

Chaney, Wichita; R. W. Robbins, McPherson, Kans.; A. J. Roberts, McPherson, Kans.; George French, McPherson, Kans; R. W. Miller, Chase, Kans., and Ed. Chastain, Chase.

### S. F. BOWSER & CO., INC.
**Booths 63-64, Refiners and Marketers Bldg.**

The S. F. Bowser & Co., Inc., Fort Wayne, Ind., is exhibiting in Booths 63 and 64 in the Refiners and Marketers Building, with A. H. Dickmeyer, advertising manager; E. C. Marsh, general sales manager; C. A. Weego, Dallas, Tex., district manager; and J. A. Forsythe, New York district manager, in attendance.

The exhibit features for the first time the Bowser Xacto meter. The measuring instrument and the air separator are glass-enclosed to show their operation and the method by which Xacto meter attains its precision measurement. This outfit is constructed in such a way as to make possible the measurement of liquid under various operating conditions. It can be subjected to most severe installation and operation conditions, showing high degree of accuracy, within 1 to 2 cubic inches, plus or minus, on a 5-gallon quantity, measured into a government sealed calibrated can.

We will exhibit the complete Xacto meter line used in the oil industry and in connection therewith a series of 30"x 24" photographs showing the various applications of the Xacto.

### BRADEN STEEL CORP.
**Booth 2, California Bldg.**

The Braden Steel Corp., Tulsa, is exhibiting in Booth 2 in the California Building, with Messrs. Hinkefent, Merrill, Hendricks and Pharr in attendance.

The exhibit features a complete section of a standard building, as well as a built-to-scale miniature of an engine and belt house.

### BRIDGEPORT MACHINE CO.
**Booths 64-65-66, Texas Bldg.**

The Bridgeport Machine Co., Wichita, Kans. is exhibiting in Booths No. 64-65-66, in the Texas Building with L. A. Babb, sales manager, and I. C. Lawless, publicity director, in attendance.

The exhibit features the distribution from the booth of a special edition of the "Bridgeport Bulletin," covering the complete Bridgeport organization in Kansas, Oklahoma and Texas, as well as complete description of the products

which the company manufactures and distributes.

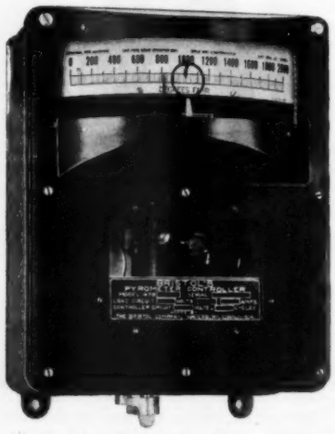
The company will also have on display in the booths, Bridgeport drill collars in two types; Hychrome drill pipe floats; double-three-point rotary reamers, model B an improved model of rotary reamer.

Also Bridgeport-Vickers releasing and circulating overshot; Jensen pumping jacks and power units; Bridgeport rotary hose; American wire lines; Aquagel and Baroid drilling mud admixtures and Bridgeport straight lift pumping hangers.

Other products featured are the Bridgeport stuffing box, Hychrome casing shoes, tapered taps, the Swan underreamer and other cable tool and rotary specialties which the company manufactures and distributes through their branch stores.

### THE BRISTOL CO.
**Booths 1-2, Scientific and Technical Bldg.**

The Bristol Co., St. Louis, Mo., is exhibiting in Booths 1 and 2 in the Scientific and Technical Building, with L. G.




Bean, E. L. Stilson, F. A. Faust and L. E. Mustard in attendance.

The exhibit features Bristol Metameter, a new development for transmitting and recording over telephone lines pressures, temperature, liquid levels, etc. The Metameter operates over ordinary telephone circuits and can be used over lines carrying conversation.

Bristol Free Vane Recorder Controller, an instrument using the novel Bristol free vane control system which is entirely frictionless and gives a truthful record of temperature and pressure maintained at all times.

Bristol recording pressure gauges and thermometers, all in the new moisture-proof, Model 40-M cases.

Bristol Model 640-M ammeter, in the new type case, is being widely used for such applications as showing the load, where the pumps are located at the bottom of the well and a check must be kept at the surface of its operation.

Bristol Synchrovane Valve of the V-port type, that can be made either direct or reverse acting in the field. It uses the newly developed synchrovane top with moulded diaphragm giving direct proportional opening for a given top pressure whether the valve is opening or closing. Various types of valve bodies and trim such as KA 2 alloy, can be supplied.

Bristol absolute pressure gauge, in the new moisture proof case, is specially designed for use in vacuum distillation.

Bristol indicating and recording pyrometers are shown in the new flush type moisture proof cases with enclosed mercury switches in the multiple recorder and Pyrometer controller.

### BRODERICK & BASCOM ROPE CO.
**Booth 13, Continental Supply Co. Bldg.**

Broderick & Bascom Rope Co., 4203 North Union Boulevard, St. Louis, Mo., is exhibiting in Booth 13 in the Continental Supply Co. Building, with Fred Zimmerman sales manager; M. R. Gayle, Mid-Continent sales manager, E. E. Deacon and R. A. Hill in attendance.

The exhibit features small reels of rope showing our product, consisting of rotary lines, drilling cables, sand lines, sucker rod, tubing and winch lines. Also a large number of samples of various sizes, grades and construction of wire rope.

### THE BROWN INSTRUMENT CO.
**Booths 39-64, Scientific and Technical Bldg.**

The Brown Instrument Co., Philadelphia, Pa., is exhibiting in Booths 39-64 in the Scientific and Technical Building, with R. P. Brown, president; George W. Keeler, vice president-director of sales; Nelson Chance, sales manager; F. M. Poole, district manager; A. H. Koch, and G. S. Younkin, sales engineers; R. W. Groendycke and E. J. Collins, service engineers, in attendance.

The instruments, mounted on a centralized panel board, include: Pyrometers, Potentiometer and Millivoltmeter type, indicating, recording and controlling temperatures in stills, towers, furnaces, flues and lines. Flow Meters, electrical and mechanical, indicating, recording, totalizing and controlling the flow of gas, steam, water, air and other liquids, gases or vapors. $CO_2$ Meters, indicating, recording and controlling per cent of $CO_2$ in still and boiler furnaces to check and insure efficiency of combustion.

Thermometers, temperature ranges up to 1,200° F.

Pressure and Vacuum Gauges, for all oil refinery applications.

Liquid Level Gauges, registering the level of liquid products in tanks or towers, at a distance.

Resistance Thermometers, for low temperatures such as are encountered in dewaxing plants.

All instruments are of the indicating, recording and controlling type.

Automatic Control Instruments, will also be shown for controlling temperatures, pressures, flows, liquid levels and speeds.

In addition to the above instruments, there will be mounted on tables, cut-away views of the new Brown meter-body for measurement of flows up to 5,000 lbs. pressure, operates on the inductance bridge principle, and a cut-away view of the area meter-body for measurement of heavy oils tars and distillates.

The latest type Brown Mechanical Flow Meter will be exhibited, for use in applications where this type of meter is desirable.

There will also be a single record recording potentiometer enclosed in a glass case that exposes all working parts of the Brown Potentiometer and which the visitor at the booth can personally operate.

A cut-away model of the New Brown Control Thermometer will demonstrate how temperatures up to 1,200° F. can be controlled without the use of relays. This new controller operates through mercury-in-glass switches which have a capacity of 15 amperes at 110 volts, 10 amperes at 220 volts. The Brown Controller separates control function from measuring functions; the design permits free and unhampered movement of the pen, thus insuring maximum accuracy. It has many outstanding features that are desirable for refinery automatic control applications.

### BUCKEYE IRON & BRASS WORKS
**Dayton, Ohio**
**Outside Space on Grounds**

### THE BUCKEYE TWIST DRILL CO.
**Booths 29-30, Texas Bldg.**

The Buckeye Twist Drill Co., Alliance, Ohio, is exhibiting in Booths 29 and 30 in the Texas Building, with W. E. Corby and W. J. Raining of the Corby Supply Co., St. Louis, Mo., in attendance.

The exhibit features twist drills and reamers of various sizes and styles.

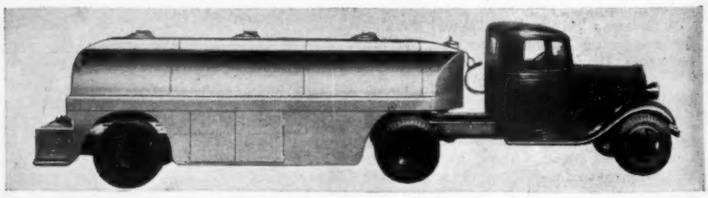
### THE BUDA CO.
**Booths 74-75, Oklahoma Bldg.**

The Buda Co., Harvey, Ill., is exhibiting in Booths 74-75, Oklahoma Building with L. M. Viles, president; R. K. Mangan, sales manager, industrial division; A. F. Ochtman, sales engineer and Linn K. Park, district sales manager in attendance.

This exhibit features a 120 horsepower Diesel engine, a 90 horsepower natural gas or gasoline-powered engine, and a 30 k. w. Diesel-powered generating set.

### BUTLER MANUFACTURING CO.
**Booth 7, Refiners and Marketers Bldg.**

The Butler Manufacturing Co., 7400 East Thirteenth Street, Kansas City, Mo., is exhibiting in Booth 7 in the Refiners and Marketers Building, with W. E. Botz, Louis Brown, C. C. Crouch, E. E. Norquist, George Bardsley and H. W. Webb in attendance.

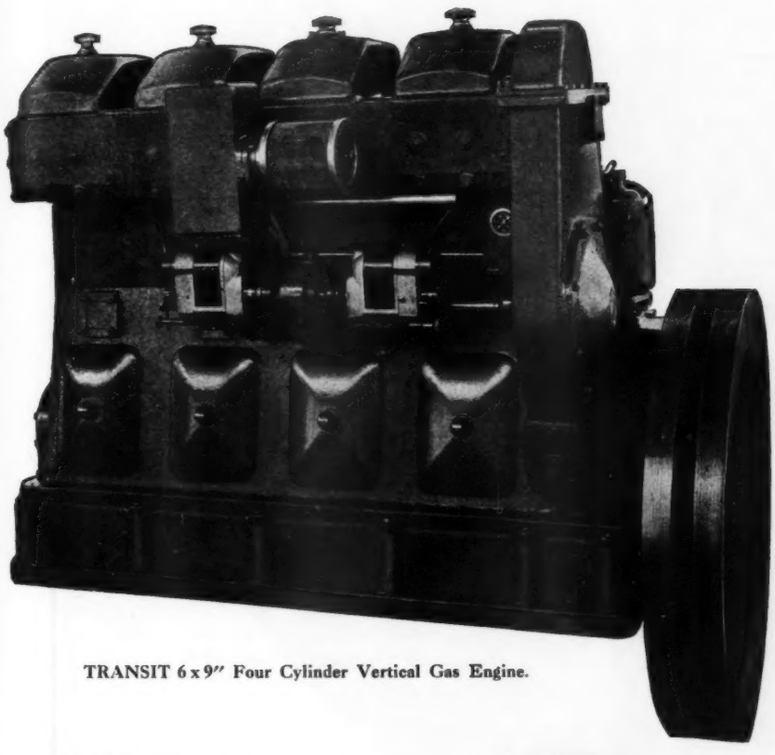


The exhibit features one 2,000-gallon Trailow-Tank, with new double back bone streamline design, the enclosed barrel carriers, mounted on Timken axle with tires and wheels, hooked up to tractor, painted and lettered Champlin Refining Co.'s specifications.

The Trailow-Tank is streamlined to a nicety and in such a way that expansion

# TRANSIT

## *NEW DEVELOPMENTS AT THE TULSA SHOW*



TRANSIT 6 x 9″ Four Cylinder Vertical Gas Engine.

**See the new TRANSIT 6x9″ Vertical Six Cylinder Gas Engine in operation at the Tulsa Oil Exhibition, Section "G."**

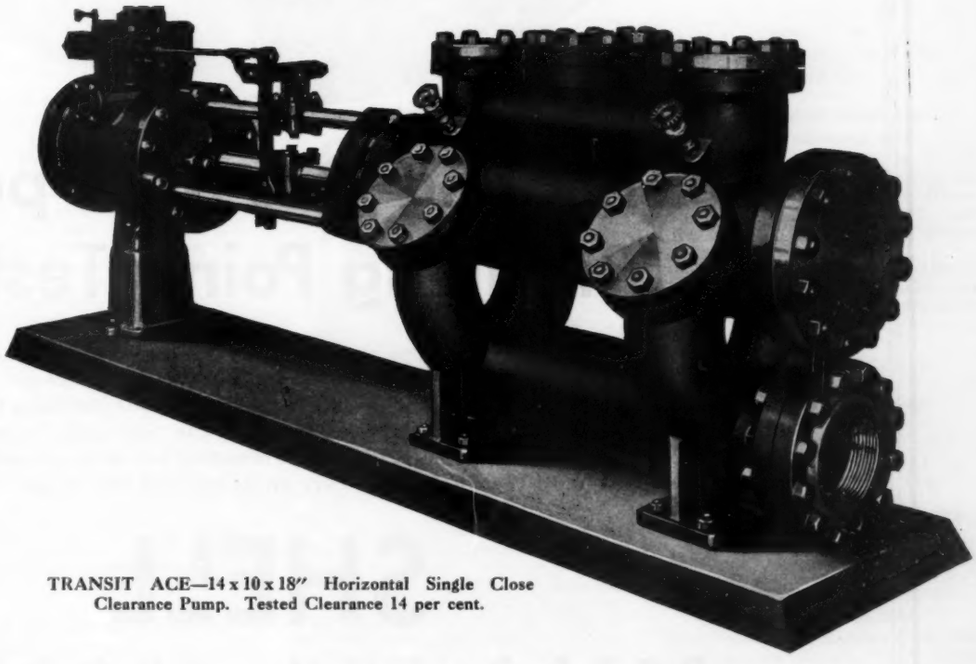
**It fills the gap between the large slow speed engine and the small high speed engine. High quality, trouble-free operation, high economy in lubricating oil and fuel consumption,—all help to reduce operating and maintenance costs to the minimum.**

In this same section "G", you will also be able to inspect the new ACE Close Clearance pump. As the name implies it has:

ACCESSIBILITY—Access to both suction and discharge valves from above—simplicity of construction, interchangeable valve service.

CLOSE Clearance—Reduced to minimum of practical limits.

EFFICIENCY—High volumetric efficiency due to close clearance.

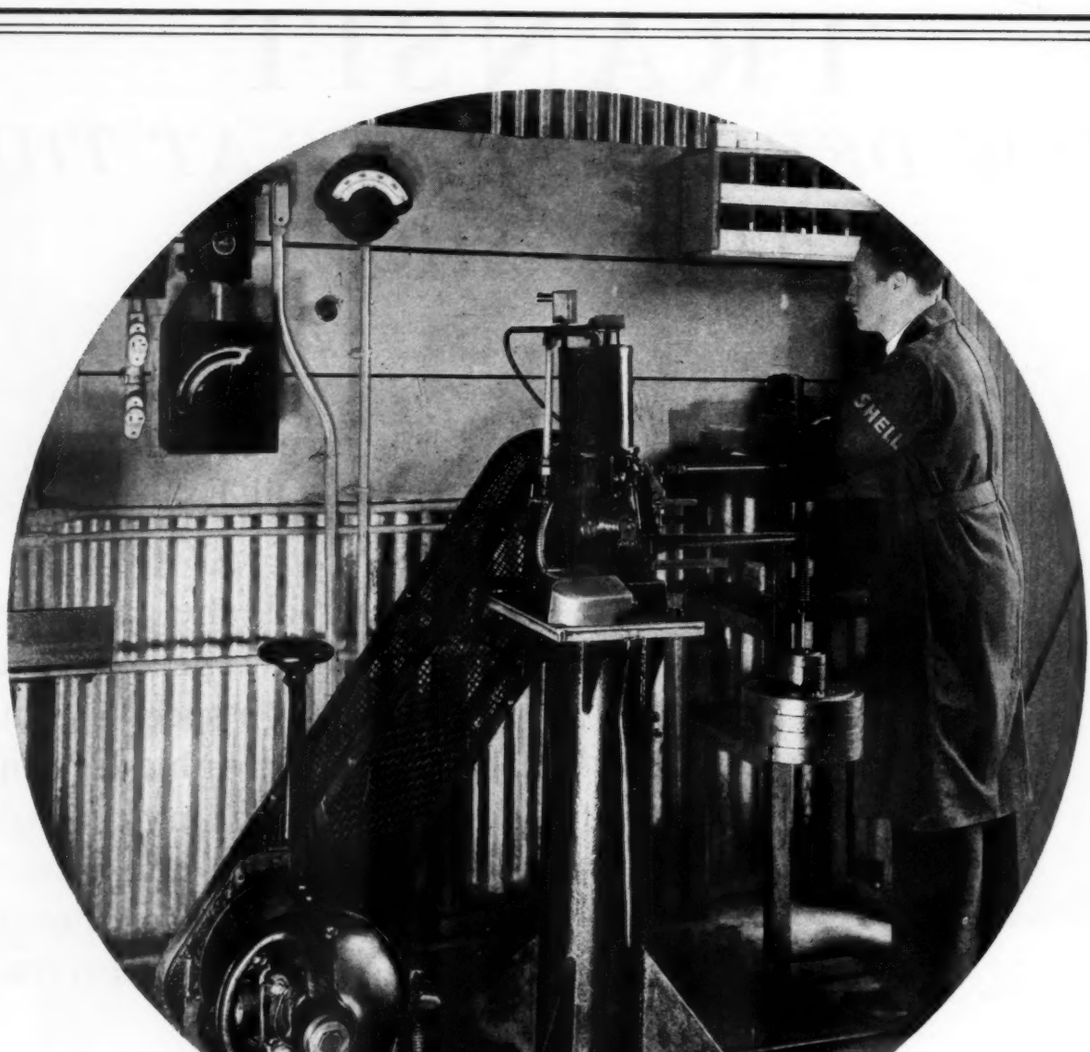


TRANSIT ACE—14 x 10 x 18″ Horizontal Single Close Clearance Pump. Tested Clearance 14 per cent.

## NATIONAL TRANSIT PUMP AND MACHINE CO.

OIL CITY, PENNSYLVANIA

NEW YORK . PHILADELPHIA . CHICAGO . CLEVELAND . PITTSBURGH . LOS ANGELES . HOUSTON . TULSA




# Lubricating Oils must pass our "Breaking Point" Test . . .

★ Here is another of the many tests by which we insure the efficient performance of Shell Petroleum Products under actual operating conditions. This particular Shell testing machine measures the breaking points of oil films. Makes *sure* that the "strength," or maximum load-carrying capacity, of Shell lubricating oils is amply sufficient to safeguard the costly machinery on which they will be used. ★

# SHELL

## PETROLEUM PRODUCTS

Nine strategically located Shell Refineries: Arkansas City, Kan.; Coalinga, Cal.; Dominguez, Cal.; East Chicago, Ind.; Houston, Texas; Martinez, Cal.; Norco, La.; Wilmington, Cal.; Wood River, Ill.

domes set flush with a "double backbone" formed in the top of the tank. The Trailow-Tank embodies a trailer frame on a tank rather than the conventional tank on a trailer frame. Trailer frame and cradle mounting are eliminated. Transportation costs as low as .0000175 cent per gallon, per mile have been reported through the use of the Trailow-Tank.

Two oil barrels, one lithographed; oil carrying cans, cadmium coated with corrugated sides; special four-feature manhole for storage tanks having safety valves, pressure and vacuum vent and fire screens, built-in valve to meet various state regulations where certain regulations are in force. Buckeye Iron & Brass Works' display on brass goods.

One 550-gallon, four-compartment truck tank with Bi-Flex mounting, painted and lettered Conoco's specifications. The truck tank has our new Bi-Flex patented mounting which eliminates strain and twist on tank permitting it to ride with chassis frame.

Buckeye Iron & Brass Works will display their line of brass goods.

### THE CALORIZING CO.
**Booths 29-30, Scientific and Technical Bldg.**

The Calorizing Co., P.O. Box 157, Wilkinsburg, Pa., is exhibiting in Booths 29 and 30 in the Scientific and Technical Building, with Roger Stuart Brown and F. W. Hay in attendance.

The exhibit features heat enduring and corrosion resisting materials for oil refinery construction. The booths will be laid out in the form of an oil still furnace with complete structural steel, brick work and modern tube supports completely assembled with tubes in place.

The tubes exhibited will be present-day heavy duty Calorizing immune to exterior oxidation and interior sulphur corrosion.

### CARRICK ENGINEERING CO.
**Michigan City, Ind.**
**Booths 8 and 9, Scientific and Technical Bldg.**

With Refinery Supply Co.

### CATERPILLAR TRACTOR CO.
**Block E, on Grounds**

The Caterpillar Tractor Co., Peoria, Ill., is exhibiting in Block "E" on the grounds, with W. K. Cox in attendance.

The exhibit features "Caterpillar" Diesel seventy-five tractor, "Transportation Special" equipped with a Willamette-Ersted towing winch pulling a fourth-ton Athey oil field wagon.

"Caterpillar" gasoline fifty tractor, "Oilfield Special" equipped with an All-Steel rod and tubing winch.

"Caterpillar" gasoline thirty-five tractor, "Oilfield Special" equipped with a Wilson rod and tubing winch.

"Caterpillar" gasoline twenty-eight, "Bradford Special" equipped with a Willamette-Ersted rod and tubing winch.

"Caterpillar" Diesel thirty-five, "Pipeline Special" equipped with an Allsteel side boom.

"Caterpillar" gasoline thirty-five, "Pipeline Special" equipped with a Seminole side boom.

Gardner-Denver ADH two-stage 457-cubic foot displacement compressor. It is powered with a 6-cylinder, 102-horsepower D-11,000 "Caterpillar" Diesel power unit.

Schramm compressor, 300-cubic foot displacement, powered with a 4-cylinder, 63-horsepower "Caterpillar" D 770 Diesel power unit.

A 3-cylinder, 47-horsepower "Caterpillar" Diesel power unit.

A 4-cylinder, 47-horsepower "Caterpillar" natural gas power unit.

A leaning wheel grader.

### THE CENTRAL FORGING CO.
**Booth 97, Oklahoma Bldg.**

The Central Forging Co., Catawissa, Pa., is exhibiting in Booth 97 in the Oklahoma Building, with F. R. Long, president, and H. B. Lacy, district manager, in attendance.

The exhibit features a combination check valve and union which has never been shown before. It is simple in design and has a small number of parts which are easily accessible. It is different than the ordinary check valve in as much as it has no openings in the body and elimi-

nates the use of the union which is generally close to the valve.

Also a complete line of Catawissa forged steel unions, standard weight for 2,000 pounds hydrostatic pressure and the double extra heavy weight for 6,000 pounds pressure, and also a reducing union.

### CENTURY ELECTRIC CO.
**Booths 38-39, Oklahoma Bldg.**

The Century Electric Co., 1806 Pine Street, St. Louis, Mo., is exhibiting in Booths 38 and 39 in the Oklahoma Building, with T. Pellmounter, G. W. Carlson W. C. Schade, and L. S. Todd in attendance.

The exhibit features in Booth 38 electric motors and fans with special attention paid to explosion proof motors for hazardous locations and gasoline dispensing pump motors which have been approved by the Underwriters. Also splash proof motors, slip ring, squirrel cage and special blower motor for air conditioning installations.

In Booth 39 an exhibit by Century Foundry will exhibit special castings of interest to the oil industry as well as bubble trays and caps.

### CENTURY FOUNDRY
**Booths 38 and 39, Oklahoma Bldg.**

The Century Foundry, 3727 Market Street, St. Louis, Mo., is exhibiting in Booths 38 and 39 in the Oklahoma Building, with W. C. Schade, Jr., general manager; L. S. Todd, sales engineer; W. C. Schade, Jr., sales engineer; and J. W. Snelson, metallurgist in attendance.

The exhibit features miscellaneous iron and alloy castings used by refiners and equipment manufacturers. Cupola and electric furnace metals.

Also bubble caps and trays, tube hangers, tube sheets, pump liners and furnace fittings.

### CHAIN BELT CO.
**Booth 1, Texas Bldg.**

The Chain Belt Co., 1600 West Bruce Street, Milwaukee, Wis., is exhibiting in Booth 1 in the Texas Building, with Brinton Welser, M. G. Jewett and Walter Snavely in attendance.

The exhibit features Rex Deepwell chain and Rex Roller chain, both highly finished steel chains. Literature and note books will be distributed at the booth.

### CHAMPION RIVET CO.
**Booth 102, Oklahoma Bldg.**

The Champion Rivet Co., East 108th and Harvard Avenue, Cleveland, Ohio, is exhibiting in Booth 102 in the Oklahoma Building, with T. Pierre Champion and Frank M. Washington in attendance.

The exhibit features rivets, welding rod, welding test specimens, thread protectors and chill rings manufactured by Wedge Protectors, Inc., Cleveland, Ohio.

### THE CHAMPION MACHINE & FORGING CO.
**Booth 5, Continental Supply Co. Bldg.**

The Champion Machine & Forging Co., 3695 East Seventy-eighth Street, Cleveland, Ohio, is exhibiting in Booth No. 5 in the Continental Supply Co. Building, with Mr. Johnson, engineer, in attendance.

Exhibit will consist of an assembly of standard pipe coupled with a Champion drop forged gasket type coupling. The whole assembly under 20 inches of vacuum. This assembly is placed under vacuum at the plant at Cleveland before shipment to Tulsa for the purpose of proving that such a vacuum can be held indefinitely. Assembly is fitted with a gauge which shows at all times the exact amount of vacuum.

An assembly of standard pipe coupled with the Champion drop forged gasket type coupling. The whole assembly under a pressure of 3,400 pounds to 4,000 pounds. This assembly is also set up at the factory in Cleveland, Ohio, before shipping to Tulsa. Assembly is fitted with a gauge which registers at all times the exact pressure.

An assembly of standard pipe coupled with Champion drop forged couplings, the whole assembly to be used for demonstrating the performance of the Champion drop forged coupling in holding against pressures and vacuum. Utilizing this assembly, attendants will run pressures up to 3,000 pounds or more and then release the pressure and place the entire unit under about 20 inches of vacuum. This operation will be repeated about every two minutes throughout certain periods of each day. This will show the amount of expansion and contraction taken care of by each coupling. It will show how securely gaskets seal connection against pressure or vacuum under more severe conditions than will be met with in actual practice.

A display of Champion drop forged gasket type couplings and attendants who will demonstrate the speed and simplicity of applying these couplings to a pipe line.

### CHAPLIN-FULTON MANUFACTURING CO.
**Booth 88, Texas Bldg.**

The Chaplin-Fulton Manufacturing Co., Pittsburgh, Pa., is exhibiting in Booth 88 in the Texas Building, with Thomas H. Thorn and F. N. Goedert in attendance.

The exhibit features pressure regula-

tors, reducing and back pressure, of all description and for all services and pressures.

Many models are of the cut-away type, giving a clear understanding of the construction and design.

A new type inside valve will be shown. This valve makes possible the conversion of the ordinary high pressure regulator into one giving tight shutoff; this is possible because of the insertion of a pliable composition seating material in its construction.

All major and minor improvements in the design of Fulton Regulators will be clearly shown.

The cut shown in The Oil and Gas Journal of February 22, 1934, illustrates the improvements in the standard regulator.

### CHICAGO BRIDGE & IRON CO.
**Booth 86, Texas Bldg.**

The Chicago Bridge & Iron Works, 37 West Van Buren Street, Chicago, Ill., is exhibiting in Booth 86 in the Texas Building, with D. A. Leach, Tulsa, in attendance.

The exhibit features a complete line of special types of oil storage tanks for preventing evaporation loss and fire. Detail views will be included of a tank equipped with a Wiggins breather roof for standing storage, a tank equipped with a Wiggins pontoon roof for working storage, a radial cone design tank for the storage of liquids requiring from 1 to 10 pounds pressure to prevent evaporation loss, a Hortonspheroid for 10 to 20 pounds pressure and a Hortonsphere for 20 pounds pressure and up.

### CHICAGO PNEUMATIC TOOL CO.
**Booths 67-68, Texas Bldg.**

The Chicago Pneumatic Tool Co., No. 1 West Sixteenth Street, Oklahoma City, Okla., is exhibiting in Booths 67 and 68 in the Texas Building, with C. E. Reed, R. H. Giesey, Paul Gray and Rex Parks in attendance.

The exhibit will feature a new model roller cutter bit which is a new application of the well-known roller type of cutter as distinguished from the cone type cutters.

A new shale bit of the disc and roller bit type, the first of its kind introduced to the drilling industry.

The well-known Tucone bits in either roller bearing or friction bearing type requiring oil lubrication. A complete line of drilling bits employing roller cutters, each type a highly developed and efficient tool.

Single three-point reamers embodying new improvements in the forms of the replaceable bearing blocks which are assembled with the reamer cutter and bearing as a unit for insertion in the reamer bodies.

Double three-point reamers. Details of these reamers are the same as the single three-point reamers.

### CINCINNATI ADVERTISING PRODUCTS CO.
**Booths 29 and 30, Texas Bldg.**

### C. A. CLAFLIN CO.
**Boston, Mass.**
**Booths 29 and 30, Texas Bldg.**

With Corby Supply Co.

### CLARK BROTHERS CO.
**Booth 21, Oklahoma Bldg.**

The Clark Bros. Co., Olean, N. Y., and Tulsa, is exhibiting in Booth 21 in the Oklahoma Building, with J. B. O'Connor and C. P. Clark, Olean, N. Y.; and D. K. Hutchcraft and George W. Probst, Tulsa, in attendance.

The exhibit features a new 17-inch inverted type power cylinder, special high pressure valves and miscellaneous parts used on Clark gas engines.

### CLEVELAND CHAIN CO.
**Cleveland, Ohio**
**Outside Space on Grounds**

### CLEVELAND STEEL TOOL CO.
**Cleveland, Ohio**
**Booths 29 and 30, Texas Bldg.**

### CLOVER MANUFACTURING CO.
**Gates Hardware Co. Bldg.**
**Outside Space on Grounds**

### C-O-TWO FIRE EQUIPMENT CO.
**Booth 43, Oklahoma Bldg.**

The C-O-Two Fire Equipment Co., 560 Belmont Avenue, Newark, N. J., is exhibiting in Booth 43 in the Oklahoma Building, with W. L. Ferrier, B. S. Allen, and Ferguson Alexander in attendance.

The exhibit features a line of portable carbon dioxide fire extinguishers of 7½, 10, 15 and 20-pound gas contents. These extinguishers are recommended for a variety of electrical, marine and industrial

fire hazards, particularly those involving flammable liquids or electrical equipment. They extinguish fire by discharging a harmless inert gas, carbon dioxide, which dilutes the flame supporting oxygen and smothers the fire.

The C-O-Two valve holder disc, which seals the extinguisher against leakage. C-O-Two extinguishers are also shown with one or two 50-pound cylinders on wheels. C-O-Two hose reel and hose rack stations are also installed for marine, aviation and industrial protection.

Also the C-O-Two fixed fire extinguishing system of the pressure type complete with cylinders with auto-pneumatic discharge head, approved by Underwriters' Laboratories.

### COCHRANE CORP.

**Booths 8-9, Scientific and Technical Bldg.**

The Cochrane Corp., Philadelphia, Pa., exhibiting with Refinery Supply Co.

### COFFING HOIST CO

**Booth 50, California Bldg.**

Coffing Hoist Co., Danville, Ill., is exhibiting in Booth 50 in the California Building, with Mike Crowder and F. W. Coffing in attendance.

The exhibit features will be composed of new type and different designs and capacities of hand and electric hoists, consisting of two different types of hand hoists, one a ratchet lever type, the other an endless chain with a clutch release. An electric hoist has some new principles consisting of a balance instead of balance weights.

Also have a new type load binder, very light in weight and with high tensile strength, equipped with a standard 2-foot take-up. Any length take-up chain can be added.

### COLUMBUS-McKINNAN CHAIN CORP.

**Tonawanda, N. Y.**

**Booth 43, California Bldg.**

### COMBUSTION ENGINEERING CO.

**Booth 2, Texas Bldg.**

The Combustion Engineering Co., New York City, will exhibit in Booth 2 in the Texas Building, with W. W. Boyd, H. S. Colby, A. W. Harris, Walter Springs, and J. W. Mason in attendance.

The exhibit features the manufacturing facilities of the company, particularly of its subsidiary, the Hedges-Walsh-Weidner Co., Chattanooga, Tenn. They will feature work done for leading refineries in the field of pressure and vacuum vessels, in carbon and alloy steels, boilers and the fabrication of drums and towers.

Enlarged views of the annealing ovens, bending presses and X-ray equipment at the Chattanooga shops will be shown. Part of a sectional header of a boiler will be on view and there will be welding samples, not of the ordinary kind, but those covering special alloys to resist corrosion and creep, as well as high tensile specimens. These exhibits will demonstrate the exceptional shop facilities for doing large and high-grade work in the boiler and refinery equipment fields.

### COMPTON & SONS

**Booth 4, Refiners and Marketers Bldg.**

The Compton & Sons L. & P. Co., 212 Locust Street, St. Louis, Mo., is exhibiting in Booth 4 in the Refiners and Marketers Building, with Emil C. Heineman, vice president, and Dan Roods in attendance.

The exhibit features billboard posters, muslin banners, drill cloth pennants, outdoor fiber signs, novelties such as head gears and fans.

### CONTINENTAL CAN CO., INC.

**Booths 10, 11, 12 and 13, Refiners and Marketers Bldg.**

The Continental Can Co., Inc., 100 East Forty-second Street, New York City, is exhibiting in Booths 10, 11, 12 and 13 in the Refiners and Marketers Building with O. G. Jakob, division sales manager, New York City; J. M. Cross, manager of developments, New York City; H. A. Goodwin, advertising manager, New York City; R. S. Solinsky, district sales manager, Chicago; H. A. Rapelye, district sales manager, Kansas City, Mo.; W. A. Rooney, sales representative, Kansas City, Mo.; R. C. Westerman, district sales manager, Houston, Tex.; C. H. Hulbert, sales representative, Houston, and L. J. LaCava, assistant sales manager, general line division, New York City in attendance.

The exhibit will feature a 10 or 15-minute skit put on by living actors upon a stage built in the center of the booth space. The skit will be in three scenes, the first laid in a refiner's office; the second, the interior of a service station; the third, the exterior of the service station.

The theme of the skit is to prove the merits and advantages of adopting canned oil for distribution from the refinery to the ultimate consumer. It is reported that a very pretty young lady has one of the leading parts in the skit and an important part in putting the whole story of canned oil across.

### THE CONTINENTAL SUPPLY CO.

**Continental Supply Co. Bldg.**

The Continental Supply Co., Dallas, Tex., is exhibiting in the Continental Supply Co. Building, on grounds, with W. J. Morris, president; F. M. Mayer, vice president; F. I. Brinegar, assistant to the president; C. H. Meyer, manager of sales; Charles King, manager of tubular sales; A. J. Olson, manager of machinery sales; H. E. Spencer, director of purchases; C. J. Halloran, district manager; F. H. Thrailkill, district manager; E. N. Wood, district manager; R. E. F. Schmidt and Dwight A. Davis, district manager, in attendance.

The following companies will share the space in the Continental Supply Co. Building and for details of each exhibit refer to the separate company listing:

Broderick & Bascom Rope Co., St. Louis, Mo.

Champion Machine & Forging Co., Cleveland, Ohio.

Emsco Derrick & Equipment Co., Los Angeles, Calif.

Fairbanks-Morse & Co., Beloit, Wis.

Falk Corp., Milwaukee, Wis.

Farrar & Trefts, Buffalo, N. Y.

Gardner-Denver Co., Quincy, Ill.

MacClatchie Manufacturing Co., Compton, Calif.

Mechanical Rubber Co., Cleveland, Ohio.

New Bedford Cordage Co., New Bedford, Mass.

Westcott Valve Co., East St. Louis, Ill.

Youngstown Steel Products Co., Youngstown, Ohio.

Youngstown Sheet & Tube Co., Youngstown, Ohio.

### C. LEE COOK MANUFACTURING CO.

**Booth 51, Texas Bldg.**

The C. Lee Cook Manufacturing Co., Louisville, Ky., is exhibiting in Booth 51 in the Texas Building, with W. W. Woobank, F. Black and Robert E. Kirn in attendance.

The exhibit features their complete line of oil field metallic rod packings and piston rings for gas, Diesel engine and gas compressor services. There will be featured Cook's graphitic iron piston rings, mechanically tensioned by a newly developed process. The Cooktite sealing ring, the accepted replacement ring for restoring new engine efficiency after cylinder wear has occurred, will also be on display.

### COOK PAINT AND VARNISH CO.

**Booth 7, California Bldg.**

The Cook Paint and Varnish Co., with general offices in Kansas City, Mo., and factories and branches in principal cities, is exhibiting in Booth 7 in the California Building, with John Jordan, manager industrial sales division, Kansas City, Mo., in attendance.

The exhibit features a complete line of finishing materials for the production, marketing and refining divisions of the petroleum industry, with especial attention to Cook's Coroc 801 finish for gasoline pumps, tank trucks, filling stations, etc.

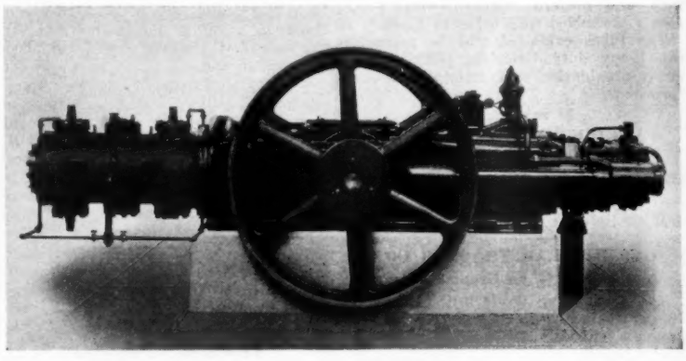
Resistance to gasoline attack, permanence of color, brilliant luster, extreme durability and quick dry are outstanding features claimed for this finish, which make it particularly adapted for use by the oil industry.

A booklet, "Paint Specifications for Filling Stations," describing a simplified finishing system using Coroc 801, is available at the Cook booth.

### COOPER-BESSEMER CORP.

**Booth 26, California Bldg.**

The Cooper-Bessemer Corp., Mount Vernon, Ohio, is exhibiting in Booth 26 in the California Building, with B. L. Potter, Mid-Continent sales manager, D. W. McKay, sales representative, A. M. Buxton, sales representative, Tulsa; A. A. Burrell, Texas sales manager, Dallas, Tex.; T. F. Hudgins, vice president and general sales manager, H. A. Gehres, vice president in charge of engineering, Mount Vernon, Ohio, and J. H. Anderson, vice president in charge of manufacturing, Grove City, Pa., in attendance.



The exhibit features GMG gas engine driven compressor in operation furnishing compressed air for pneumatic pumping head at the Sullivan Machinery Co.'s exhibit.

### CORBY SUPPLY CO.

**Booths 29-30, Texas Bldg.**

The Corby Supply Co., 3942-46 West Pine Boulevard, St. Louis, Mo., is exhibiting in Booths 29 and 30 in the Texas Building, with W. E. Corby and W. J. Raining in attendance.

The exhibit features a special display of flexible seamless tubing as manufactured by American Metal Hose Co. of Waterbury, Conn. Also a large display of Protectomotor industrial air filters as well as pipe line filters manufactured by Staynew Filter Corp. of Rochester, N. Y., as well as a number of specialties suitable for refineries and oil production in general.

### CRESCENT TOOL CO.

**Gates Hardware Co. Bldg.**

**Outside Space on Grounds**

### CROUSE-HINDS CO.

**Tulsa, Okla.**

**Booths 93 and 94, Oklahoma Bldg.**

### F. W. CROWELL

**Tulsa, Okla.**

**Booth 49, California Bldg.**

With Iverson Tool Co.

### W. M. CULMORE

**Dallas, Tex.**

**Booth 30, Refiners and Marketers Bldg.**

### W. H. CURTIN CO., INC.

**Houston, Tex.**

**Booth 54, California Bldg.**

### D. & B. PUMP & SUPPLY CO.

**Dallas, Tex.**

**Continental Supply Co. Bldg.**

**On Grounds**

### DALLETT CO.

**Philadelphia, Pa.**

**Booths 29 and 30, Texas Bldg.**

### DARLING VALVE & MANUFACTURING CO.

**Williamsport, Pa.**

**Booths 45 and 60, California Bldg.**

### DEARBORN CHEMICAL CO.

**Booth 106, Texas Bldg.**

The Dearborn Chemical Co., 310 South Michigan Avenue, Chicago, Ill., is exhibiting in Booth 105 in the Texas Building, with E. M. Converse, vice president in charge of sales; G. M. Massen, Tulsa representative, I. L. Yetman; T. F. Kittredge and C. B. Conley in attendance.

The exhibit features NO-OX-ID, the original rust preventive, stressing NO-OX-ID master coat for pipe line protection, Dearborn cleaners, Dearborn feed water treatment, and Dearborn cooling water treatment.

### DEEP ROCK OIL CORP.

**Booths 28-29, Refiners and Marketers Bldg.**

The Deep Rock Oil Corp., Atlas Life Building, Tulsa, is exhibiting in Booths 28 and 29 in the Refiners and Marketers Building, with A. L. Dade and L. E. Thompson in attendance.

The exhibit will consist of the reproduction of a typical Deep Rock filling station showing different brands of Deep Rock gasoline, motor oils and greases.

### DIENER-DUGAS FIRE EXTINGUISHER CORP.

**Booth 64, California Bldg.**

The Diener-Dugas Fire Extinguisher Corp., Chicago, Ill., is exhibiting in Booth 64, California Building with L. J. Dugas in attendance.

The exhibit features the Diener-Dugas ever-ready dry chemical fire extinguishers.

Outdoor demonstrations on oil fires will be made frequently during the period of the Exposition. Pools of oil will be set on fire and extinguished by means of the Diener-Dugas dry chemical.

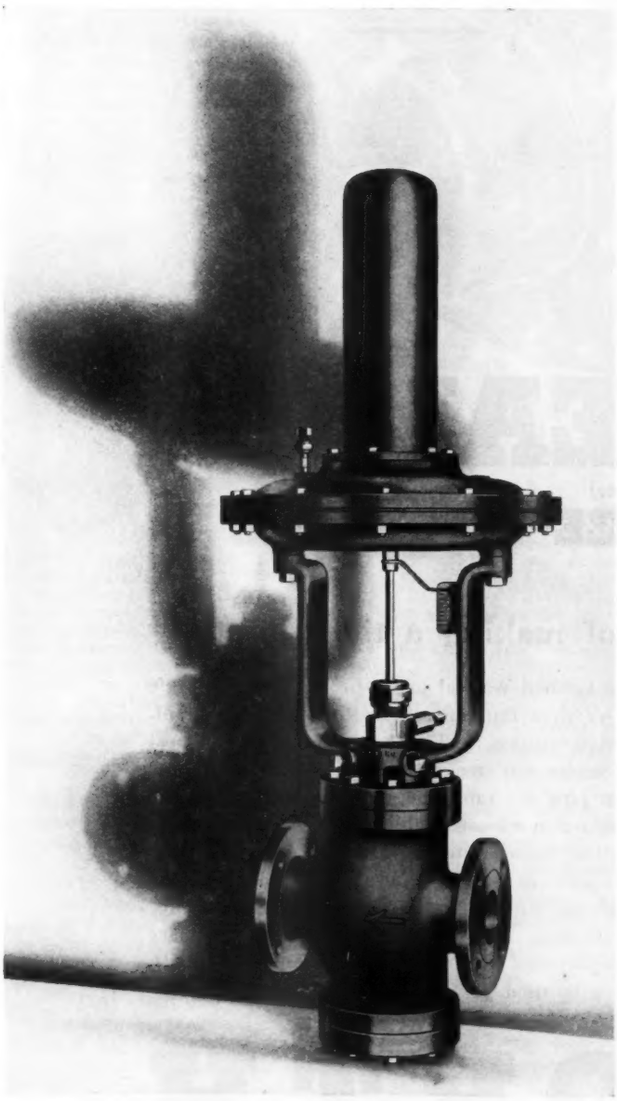
### THE DE LAVAL SEPARATOR CO.

**Booths 123-124, Oklahoma Bldg.**

The De Laval Separator Co., 165

# AGAIN!

## FOXBORO Presents a new and outstanding development in Automatic Control . . . . . The Stabilflo Valve



This unique valve corrects the common faults of Controlled Valves of the Standard types.

NO FRICTION — By literally turning the motor upside down and suspending the valve stem extension from the top of the spring, all possibility of excess friction is eliminated. No ball or roller bearings are necessary.

GREATER RANGEABILITY — By a radical change in the design of the valve plunger, the flow rangeability has been increased 400% without destroying the essential flow characteristics.

SIMPLE DESIGN — And this has been done without adding any mechanism to the fundamental design of the valve.

This is the only air-operated automatic controlled valve that has complete control of the flow at every point between 2 and 100% of its entire range.

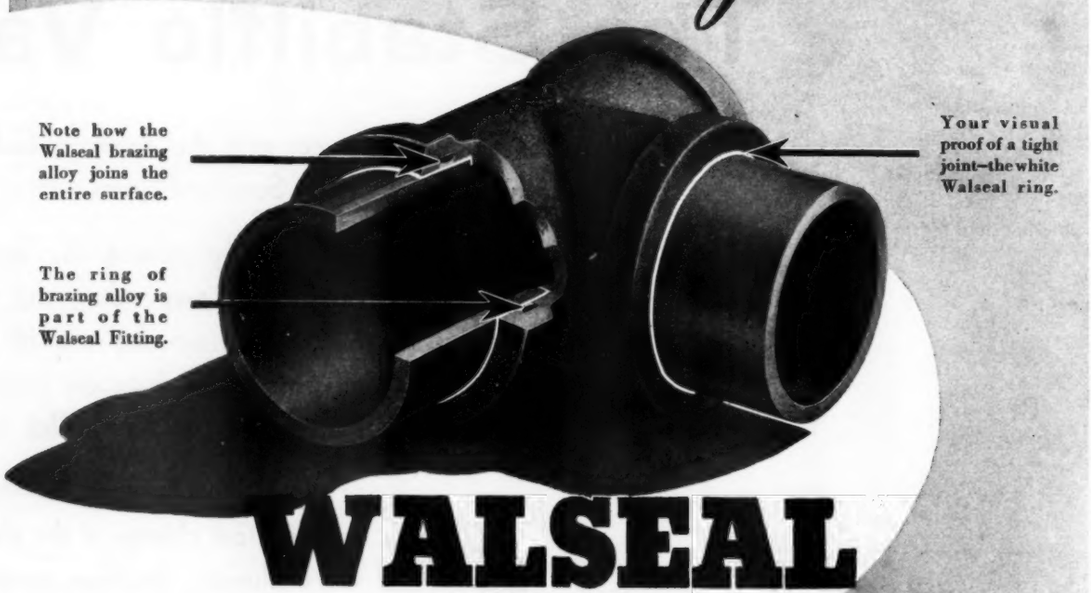
There are *many* other unique features designed into the Stabilflo Valve. It can be furnished for any size line under any pressure or temperature used commercially. Get the complete story of this interesting and valuable valve. Write today—no obligation of course.

FOXBORO
REG. U. S. PAT. OFF.
THE COMPASS OF INDUSTRY

THE FOXBORO COMPANY
FOXBORO, MASS., U. S. A.
BRANCH OFFICES IN PRINCIPAL CITIES

MOST COMPLETE LINE OF INDUSTRIAL PROCESS CONTROL EQUIPMENT

*Announcing....*


Note how the Walseal brazing alloy joins the entire surface.
The ring of brazing alloy is part of the Walseal Fitting.
Your visual proof of a tight joint—the white Walseal ring.

# WALSEAL

(Patent applied for)

## THREADLESS BRONZE FITTINGS

### ....the surest and fastest way of making a tight joint

Every quality desired for joining a non-ferrous pipe and fitting is incorporated in Walseal Fittings. The brazing alloy, "Sil-Fos", is incorporated as a ring in each opening of a Walseal Fitting. You merely slip the pipe into the fitting—apply oxyacetylene flame and when the white Walseal ring appears, a perfect joint has been made.

It is impossible to overheat the brazing alloy. The wrong brazing alloy cannot be used as Walworth builds the alloy into every Walseal Fitting and provides the proper quantity so that there is no excess to plug the line.

The finished Walseal joint—bronze or copper—is stronger than the pipe itself. It's vibration proof, corrosion-resistant, and will not creep—cannot pull apart under any temperature to which bronze or copper pipe can safely be subjected.

Last, but not least, Walseal Fittings are the only threadless bronze fittings made for iron pipe size brass pipe or extra heavy brass pipe (Walseal Bronze Fittings are available in extra heavy patterns). However, if economy is of primary importance, thin wall copper tubing I.P.S.O.D. can be used.

# WALWORTH

VALVES FITTINGS and TOOLS
Backed by 91 Years' Service

WALWORTH COMPANY
60 EAST 42nd STREET, NEW YORK

DISTRIBUTORS IN PRINCIPAL CITIES THROUGHOUT THE WORLD

Broadway, New York, N. Y., is exhibiting in Booths No. 123-124 in the Oklahoma Building with R. G. Walker, C. B. Schmidt, H. O. Sears and N. E. Larsen in attendance.

The exhibit features a new high capacity De Laval solvent refining separator used for the separation of extract from raffinate in various solvent extraction processes.

A new Ultra Accurate 100 c. c. test tube centrifuge particularly adapted to measuring small percentages of moisture or sediment in oil and permitting readings as low as .001 per cent.

A new small size high-speed 10 c. c. test tube centrifuge reading as low as .01 per cent sediment.

A new De Laval Uni-Matic oil purifier used for the purification of various lubricating and fuel oils.

### DE LAVAL STEAM TURBINE CO. TRENTON, N. J.

**Booth 62, Oklahoma Bldg.**

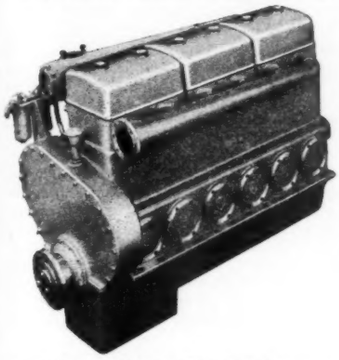
W. D. Moorer in attendance.

### DE LA VERGNE ENGINE CO.

**Open Space on Grounds**

The De La Vergne Engine Co., Philadelphia, Pa., is exhibiting in an open space on grounds, with J. H. Galloway, G. A. Palmer, M. J. Essel and George Johnston in attendance.

The exhibit features a Type VL high



speed De La Vergne Diesel engine operating under load and connected through a step-up gear to a centrifugal pump.

A De La Vergne air conditioning unit for homes and stores.

Testing equipment of interest to the oil industry, engine indicator, torsion impact machine and other similar items.

### DETROIT HOIST & MACHINE CO. Detroit, Mich.

**Booths 29 and 30, Texas Bldg.**

### HENRY DISSTON & SONS

**Gates Hardware Co. Bldg.**

**Outside Space on Grounds**

### DOHENY STONE DRILL CO. Los Angeles, Calif.

**Booths 37 and 38, California Bldg.**

Exhibiting Hy-Dril rotary outfit.

### DOVER STAMPING & MANUFACTURING CO.

**Cambridge, Mass.**

**Booths 26 and 27, Refiners and Marketers Bldg.**

### THE DOW CHEMICAL CO., DOWELL INCORPORATED

**Booths 46-59, California Bldg.**

The Dowell Incorporated, Midland, Mich., and Tulsa, Okla., is exhibiting in Booths 59 and 46 in the California Building with L. W. Lee, S. W. Putnam, William Frye, N. R. Crawford, R. N. Shaw, J. A. Cummins and L. R. Austin in attendance.

The exhibit features a display of Dowell products and services to increase oil and gas production and a scientific demonstration showing the fundamental facts upon which these products and services are founded. Dowell's patented inhibited acids will be tested for corrosive action on steel in contrast with the action of non or improperly inhibited acids. The function of Dowell blanket bottom hole protection will be demonstrated. The action of Dowell paraffin solvents for upper casing, tubing, and equipment and bottom hole and inner casing will be shown.

### DRESSER ENGINEERING CO.

**Booth 54, Refiners and Marketers Bldg.**

The Dresser Engineering Co., Tulsa, Okla., is exhibiting in Booth 54 in the Refiners and Marketers Building with L. L. Dresser in attendance.

The exhibit features porcelain enamel for the construction of service stations, displaying samples of enamel, and their application and framing construction for the structure. Also a display of porcelain signs and glass pump globes manufactured by the Beaver Enameling Co. and Macbeth Evans Glass Co.

### DRIFTMETER CO.

**Booth 28, Scientific and Technical Bldg.**

The Driftmeter, Inc., 1702 National Bank of Tulsa Bldg., Tulsa, is exhibiting in Booth 28 in the Scientific and Technical Building, with Howard S. Splane, president, and T. L. Moore, manager in attendance.

The exhibit features a new Model 103 Driftmeter Junior embodying many improvements.

### THE DUFF-NORTON MANUFACTURING CO.

**Booth 4, Arcade Bldg.**

The Duff-Norton Manufacturing Co., 2709 Preble Avenue, N. S., Pittsburgh, Pa., is exhibiting in Booth 4 in the Arcade Building, with C. N. Thulin, vice president, and H. O. Gardner in attendance.

The exhibit features up-to-date models of our complete line of lifting jacks, especially those now in general use throughout the petroleum industry. Our exhibit will be very complete and will include actual working models of our entire line of lifting jacks ranging in capacity from 1 ton to 100 tons. We will have on exhibition for the first time our air-motor operated power jacks, and we will also have on exhibition for the first time our new model general purpose jack No. 540. Included in the exhibit will be the familiar Barrett circle oil well jack and many other models of a very interesting nature.

### THE DURALOY CO. AND THE SHENANGO PENN MOLD CO.

**Booth 36, California Bldg.**

The Duraloy Co., Pittsburgh, Pa., and the Shenango Penn Mold Co., Dover, Ohio, are exhibiting in Booth 36 in the California Building, with W. F. Furman and W. C. Myers in attendance.

The exhibit features centrifugally cast bronze, monel, Ni-Resist, Everdur and stainless steel tubes, finished and rough. Miscellaneous centrifugally cast bronze parts, Chrome nickel tube supports for oil cracking stills and miscellaneous chrome iron and chrome nickel castings.

### DURAMETALLIC CORP.

**Booth 71, Texas Bldg.**

The Durametallic Corp., 2104 Factory Street, Kalamazoo, Mich., is exhibiting in Booth 71 in the Texas Building, with C. C. Hall, vice president, R. D. Hall and W. D. Emery in attendance.

The Durametallic Corp. of Kalamazoo, Mich., is showing Durametallic, a flexible metallic packing, made in five different grades, having elastic, fibrous cores with foil wrapper made of different metals. Also Dura Plastic, a plastic metallic packing shown in three grades.

They are emphasizing their Grade D Durametallic and Grade D Dura Plastic, the base of which is aluminum, as particularly well adapted for service on all types of petroleum conditions.

These packings are shown in spiral, coil, and ring shapes. Dura Plastic is also shown in bulk.

### THE EAGLE-PICHER LEAD CO.

**Booths 57-58, Oklahoma Bldg.**

The Eagle-Picher Lead Co., 901 Temple Bar Building, Cincinnati, Ohio, is exhibiting in Booths 57 and 58 in the Oklahoma Building, with W. P. Cunningham, Clyde Lynde, Marvin Smith, H. R. Shidel, F. W. C. Bailey, O. J. Timberman and George E. Todd in attendance.

The exhibit features Eagle "66," plastic insulation, extremely efficient on all surfaces up to 1,500° F. Easily applied. 100 per cent reclaimable after subjection to heat up to 1,200° F.

Eagle Insulseal, waterproofing cement for weatherproofing insulation on outdoor

refinery equipment. Finishes smoothly. Does not run or sag on vertical surfaces. Takes paint readily.

Eagle blanket insulation, composed of Eagle insulating wool carefully felted and secured between metal fabrics of various types. Efficient on surfaces not exceeding 1,200° F. Flexible. Strong. Does not shrink.

Eagle bearing metals—three of these have been designed to fill 95 per cent of all bearing metal requirements. Each one is made of virgin materials. Each gives long life. Each has low coefficient of friction. None contain hard spots that cut and score the shaft.

Eagle sublimed blue lead—rust inhibitive paint material. Extremely durable. Economical. Covers 600-800 square feet. Does not harden in keg. Easily applied by dipping, brushing, spraying, air-drying or baking.

Eagle lead wool—ideal for plugging off bottom water. Hair-like in texture, it is readily placed in wire cartridge and lowered into well. Result is an effective and economical plug that will give trouble-free service.

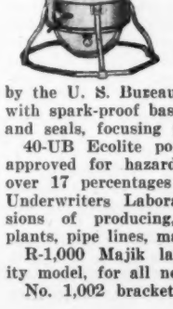
### EDISON SPLITDORF CORP. WEST ORANGE, N. J.

**Booth 19, Oklahoma Bldg.**
**With Magneto Ignition Corp.**

### ECONOMY ELECTRIC LANTERN CO., INC.

**Booth 15, Texas Bldg.**

The Economy Electric Lantern Co., Inc., 325 West Huron St., Chicago, Ill., is exhibiting in Booth 15 in the Texas Building, with K. J. Helmholtz, H. C. Gardner, L. M. Gardner and E. M. Helmholtz in attendance.



The exhibit features 42-BM Ecolite portable hand lantern approved for hazardous uses, tested in methane ethane-air mixtures by the U. S. Bureau of Mines, provided with spark-proof base, tamper-proof lock and seals, focusing reflector.

40-UB Ecolite portable hand lantern approved for hazardous uses, tested in over 17 percentages gasoline vapors by Underwriters Laboratories for all divisions of producing, refining, gasoline plants, pipe lines, marketing.

R-1,000 Majik lantern, general utility model, for all nonhazardous work.

No. 1,002 bracket—for carrying Ecolites and Majik lanterns safely when not in use, in cabs or sides of motor apparatus, for permanent locations in factories or on walls of building—nonvibrating.

### ELECTRIC SUPPLY CO.

**Booth 63, California Bldg.**

Electric Supply Co., 815 East Third Street, Tulsa, is exhibiting in Booth 63 in the California Building, with R. C. Stueve, president; R. E. Newhouse, secretary and treasurer; W. P. Woods, Jr., F. W. Stolba, E. E. Eaton, Oscar F. Shaw and F. E. Cotham in attendance.

The exhibit features samples of various lines of electrical supplies regularly merchandised to the oil industry.

### ELLIOTT CO.

**Booth 111, Oklahoma Bldg.**

The Elliott Co., Pittsburgh, Pa., is exhibiting in Booth 111 in the Oklahoma Building, with H. A. Pastre, W. E. Widau, H. S. Pahren, H. A. Hearn, J. P. Rodgers and M. M. Sellers in attendance.

The exhibit features representative types of tube cleaners used in cleaning oil stills, heat exchangers, boilers and other tubular apparatus employed in the oil refinery. Several new types of cutting heads will be featured. These tube cleaners are manufactured by Elliott Co.'s associated companies, the Lagonda Manufacturing Co., Springfield, Ohio, and Liberty Manufacturing Co., Jeannette, Pa.

### EMSCO DERRICK & EQUIPMENT CO.

**Booth 6, Continental Supply Co. Bldg.**

The Emsco Derrick & Equipment Co., Los Angeles, Calif., is exhibiting in Booth 6 in the Continental Supply Co. Building, with E. M. Smith, president; C. D. Wagner, vice president; L. R. McCullom, Mid-Continent sales manager; G. W. Walton, district manager; L. C. Scott, E. A. Richards and C. Immel in attendance.

The exhibit features charts and photographs of the latest developments in rotary drilling equipment, consisting of New Unitary type drawworks; Type H totally enclosed rotary machine; Type T (150-ton) 8-inch rotary swivel; Type UB and Type U drawworks; Type PSG rotary drawworks; Conversions, HRB, H46 and H54 drawworks; 76-inch traveling block; Type GB crown block; Type EB crown block; D.&B. pump display board, pump fittings; Oklahoma City type pumps; Type AR floor block, and rod and tubing hooks.

### ERIE METER SYSTEMS, INC.

**Booth 1, Refiners and Marketers Bldg.**

The Erie Meter Systems, Inc., P. O. Box 111, North Rockford and Frisco Tracks, Tulsa, is exhibiting in Booth 1 in the Refiners and Marketers Building, with T. G. Dabney and R. A. Newcomb in attendance.

The exhibit will feature the new Erie Figure 100 "Triple-check" visible gasoline pump and the Erie cash recorder. The visible pump is built in the Tulsa plant while the cash recorder is built in the Erie plant of the Erie Meter Systems Co., Inc.

### ERIE TOOL WORKS

**Gates Hardware Co. Bldg.**

**Outside Space on Grounds**

### FAIRBANKS-MORSE CO.

**Booth 11, Continental Supply Co. Bldg.**

The Fairbanks-Morse Co., Beloit, Wis., is exhibiting in Booth 11 in the Continental Supply Co. Building, with H. J. Renkin, manager of oil field division; Frank Ratcliffe, Tulsa representative, and H. D. Goddle, Texas representative, in attendance.

The exhibit features a 6-cylinder Model 36 Diesel engine with built-in power take-off shaft.

The new engine is an efficient prime mover for comparatively small loads. It has a capacity of 60 horsepower, is simple and easy to install, is easy to start,

XUM

economical to operate, and exceedingly flexible as to control.

The engine is of the vertical type with airless injection of fuel and it embodies the latest development in light weight full Diesel construction. For driving oil line pumps either direct drive, clutch drive through reduction gears, or V-belt drive is available. It is offered as a complete pump and engine assembly for portable line pumping, and also with either D.C. or A.C. generators for electrical service.

### FALK CORP.

**Booth 6, Continental Supply Co. Bldg.**

The Falk Corp., Milwaukee, Wis., is exhibiting in Booth 6 in the Continental Supply Co. Building, with L. A. Graham, sales manager, and T. F. Scannell, Mid-Continent representative, in attendance.

The exhibit features a 100-horsepower Continental-Falk geared power to operate at 10 strokes per minute, driven by a 3-horsepower Fairbanks-Morse-Falk all motor type motor reducer to be assembled on skids, and equipped with large tell-tale semaphore. Small cut-away motor reducer; sample flexible coupling; Rawson coupling and herringbone gears and gear cutters.

### FARRAR & TREFTS, INC.

**Booth 16, Continental Supply Co. Bldg.**

Farrar & Trefts, Inc., Buffalo, N. Y., is exhibiting in Booth 16 in the Continental Supply Co. Building, with S. Mensonides in attendance.

The exhibit features advertising matter, photographs and charts relating to the F. & T. Superheater boiler. This is a new type oil drilling boiler. An "Elesco" type of superheater, similar to the type used on locomotives, is built into the boiler. The steam is passed through this superheater and delivered to the equipment at a high temperature.

### FARREL-BIRMINGHAM CO., INC.

**Booth 24, California Bldg.**

The Farrel-Birmingham Co., Inc., 344 Vulcan Street, Buffalo, New York, is exhibiting in Booth 24 in the California Building, with John Brandt in attendance.

The exhibit features speed increasing gear units of various capacity, used principally for driving centrifugal pumps. An interesting installation can be seen at the De La Vergne exhibit where a standard 200 horsepower unit is in operation, and a similar unit can be seen at the McIntosh & Seymour exhibit. At the Worthington Co. of Oklahoma exhibit a special right angle drive can be seen. This unit is built for driving deep well turbine pumps and is of new and original design. At our booth various Sykes continuous tooth herringbone gears will be displayed and our standard Gearflex coupling.

### GEORGE J. FIX CO.

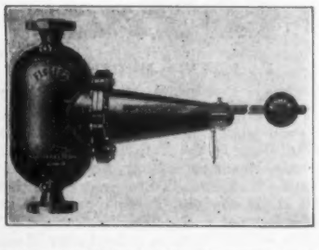
**Dallas, Tex.**

**Booths 9 and 10, Texas Bldg.**

### FISHER GOVERNOR CO.

**Booth 89, Texas Bldg.**

Fisher Governor Co., Marshalltown, Iowa, is exhibiting in Booth 89 in the Texas Building, with J. H. Fisher, president; C. D. Peterson, district manager,



and P. A. Elfers, sales manager, in attendance.

The exhibit will feature a Fisher drawn steel welded float gauge for the first time shown in sectional construction, illustrating clearly the manner of forming and welding this unit. Also operation demonstration of the new Fisher diaphragm motor valve top work with the characterized inner valve.

In addition to this, there will be a very interesting actual operation with a special flow meter attachment of the new Fisher type 730 house service regulator for gas service.

The standard Fisher equipment consisting of automatic pump governors, pressure reducing valves, steam traps, liquid level controllers, lever valves, float valves, gas regulators, back pressure valves and similar automatic controls will be on display. Many of these will be in actual operation.

The Fisher equipment to be exhibited at this show is new in every respect. The exhibit has been entirely rebuilt especially for this exhibition.

### FLORIDA CONTAINER CORP.

**Tampa, Fla.**

**Booth 50, Refiners and Marketers Bldg.**

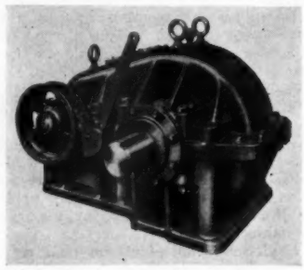
### FOOTE BROTHERS GEAR & MACHINE CO.

**Block G on Grounds**

The Foote Brothers Gear & Machine Co., Chicago, Ill., is exhibiting in Block G on the grounds, with F. A. Emmons, sales manager; Max E. Landry, Oklahoma representative, and George J. Fix, Texas representative, in attendance.

The exhibit features oil well pumping units of principal interest to the oil field, the IXL Type 200-DXO oil well pumping drive unit, power driven by an Ideal electric motor and a Veetex drive, used with the standard samson post, beam and pitman, for deep well pumping.

The IXL oil well, heavy duty, industrial unit, is available in both single and



double reductions, having a slow speed range from 5 to 25 r.p.m. This particular unit has a ratio of 34½ to 1.

Hygrade worm gear speed reducer line is illustrated by the 4-HGD double reduction Hygrade worm gear speed reducer.

Hygrade worm gear speed reducers are furnished in either Type HGS single reduction, Type HGX single reduction with helical gear attachment, Type HGD double reduction, in either horizontal or vertical types.

The small spur gear speed reducer is also on display, with the case cut away to show the internal construction.

Spur reducers can be furnished in a range of ratios from 4 to 1 up to 350 to 1, and in sizes up to 100 horsepower.

IXL helical gears and speed reducers are furnished in either single or double reduction, having either helical or herringbone gears. An IXL Type 75-SX, single reduction helical gear speed reducer is on display in Foote Brothers' booth.

A complete line of IXL powered gear speed reducers, known as motorized speed reducers, Type 302-MDZ, Type MSX and Type MTZ gives a very comprehensive illustration of their helical type powered gear units, showing both the single reduction, the double reduction and the triple reduction vertical units, all equipped with motors.

Also on display is one of the No. 3½-HGM radiating type powered gear speed reducers, a type of unit that compares and has the same construction as the Foote Brothers Hygrade line of worm gear speed reducers. IXL Hygrade worm type powered gear units can be furnished in either single, double, vertical or horizontal units, in horsepower capacities from one-quarter to 30 horsepower, having a slow speed revolutions per minute from 13 to 558 r.p.m.

Of the smaller items on display are IXL rubber cushion couplings, semi-universal couplings, L-R couplings, and a Plamondon friction clutch, all of which are extensively used in the oil fields.

Mounted on a display board is a complete example of the various types and kinds of gearing manufactured by Foote Brothers Gear & Machine Co., illustrating worm, spur, helical, bevel, mitre gearing, in the various types and kinds of material that is furnished.

### FOUR WHEEL DRIVE AUTO CO.

**Outside Space on Grounds**

The Four Wheel Drive Auto Co., Clintonville, Wis., is exhibiting in outside space on grounds, with W. M. Hanson in attendance.

The exhibit features a small model truck with a 15-inch wheelbase and an oil well special 2½-ton truck intended especially for oil field service, and one of the fleet of trucks recently sold the Halliburton Oil Well Cementing Co.

### THE FOXBORO CO.

**Booths 4, 5, and 6, Scientific and Technical Bldg.**

The Foxboro Co., Neponset Avenue, Foxboro, Mass., is exhibiting in Booths 4, 5, and 6 in the Scientific and Technical Building, with J. B. McMahon, G. B. Lane, G. B. Duff, and H. G. Griffith in attendance.

The exhibit features the latest indicating, recording, controlling and metering instruments for the oil and gas industries. Of special interest will be the showing of the potentiometer Stabilog; long distance recorders and controllers; potentiometer indicators and recorders; and cut-away models of orifice meters, recording thermometers and gauges, indicating gauges, and the Impulsator.

### FRANCE PACKING CO.

**Booth 101, Oklahoma Bldg.**

The France Packing Co., 6512 State Road Tacony, Philadelphia, Pa., is exhibiting in Booth 101 in the Oklahoma Building, with James A. McPeak, president, in attendance.

The exhibit features France floating type metallic packing for use on reciprocating engines or compressors, including double-acting gas engines and double-acting Diesels. It will pack any gaseous substance, and is backed by 38 years of satisfactory performance.

### THE FRATES CO.

**Booth 20, Oklahoma Bldg.**

The Frates Co., 310 Philtower, Tulsa, is exhibiting in Booth 20 in the Oklahoma Building, with Claiborne W. Davis in attendance.

The exhibit features the slogan: "If You Don't Stop Accidents, Who Will?" to convey our idea of accident prevention. We are doing our bit to make the public accident conscious in manufacturing, in home life and in driving automobiles.

### FRICK-REID SUPPLY CORP.

**Booths 83-84-127-128, Oklahoma Bldg.**

Frick-Reid Supply Corp., Tulsa, is exhibiting in Booths 83-84 and 127-128 in the Oklahoma Building, with various members of the organization in attendance.

The space will be used for distribution of descriptive literature and feature some Axelson equipment, linear packing and Republic Rubber Co. products. A desk and telephone will be available for use of guests.

### GARDNER-DENVER CO.

**Booth 7, Continental Supply Co. Bldg.**

The Gardner-Denver Co., Quincy, Ill., is exhibiting in Booth 7, Continental Supply Co. Building with E. F. Shaefer, vice president; L. N. Julien, district manager, and H. F. Ryan in attendance.

The exhibit features two stage vertical water-cooled compressor and mud pump valves.

### GARLOCK PACKING CO.

**Booths 59-60, Texas Bldg.**

The Garlock Packing Co., Palmyra, N. Y., is exhibiting in Booths 59 and 60 in the Texas Building, with F. E. Erlandson, J. F. Foley and Phil Arnold in attendance.

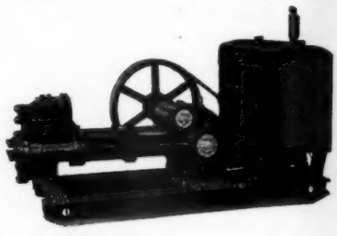
The exhibit features mechanical packings and allied products.

### GASO PUMP & BURNER MANUFACTURING CO.

**Booths 57-58, Texas Bldg.**

The Gaso Pump & Burner Manufacturing Co., 902 East First St., Tulsa, is exhibiting in Booths 57 and 58 in the Texas Building with L. D. Armstrong and Howard Stover in attendance.

The exhibit features the first full automatic gas or gasoline driven pumping unit to be developed for field use in the oil industry. The full automatic feature, developed in connection with a 30 horse-



power Buda engine, permits this unit to be set to start and stop automatically at any time intervals desired, from a few minutes up to many hours. Such automatic control has been obtainable earlier only in electric driven equipment.

The Gaso Pump used in the unit is No. 1,844. This pump has interchangeable liners 2½" to 4" by 6" stroke for delivering 50 to 128 bbls. of fluid per hour, at 650 to 350 pounds pressure. Power frame is fully enclosed. Both main and pinion shafts are journaled in Timken tapered roller bearings, which are sealed off completely from the crankcase. Gears run in an oil bath. Fluid end is equipped with monel metal valves, bronze seated.

The 30 horsepower Buda engine is one of the Buda Co.'s "Hivelo" series, and is characterized by lightweight, high-speed, and high-velocity oil and water circulation. It can be furnished for use with either natural gas or gasoline. Its full automatic control has already been mentioned. Clutch is of the automatic centrifugal type which engages only when the engine gets up to speed, and thus prevents throttling of the engine while it is warming up.

### GATES HARDWARE CO.

**Outside Space on Grounds**

The Gates Hardware Co., 317 East Brady, Tulsa, is exhibiting in outside space on grounds, with A. W. Coulter, C. B. Chancellor and Fred C. Robbins in attendance.

The exhibit features several items of new equipment manufactured by the following concerns: American Fork & Hoe Co., for shovels, true temper steel goods; Kelly Axe & Tool Works; Lufkin Rule Co., rules and gaugers' tapes; Greenfield Tap & Die Corp., taps, dies and drills; Clover Manufacturing Co., abrasives; Crescent Tool Co., hand tools; Ridge Tool Co., rigid wrenches; Trimont Manufacturing Co., Trimo; Erie Tool Works, wrenches; Henry Disston & Sons, Disston hand saws; E. C. Atkins & Co., hack saws and blades, and Spartan Saw Works, saw blades.

### GAYLORD CONTAINER CO.

**Atlanta, Ga.**

**Booth 50, Refiners and Marketers Bldg.**

### ROBERT GAYLORD, INC.

**St. Louis, Mo.**

**Booth 50, Refiners and Marketers Bldg.**

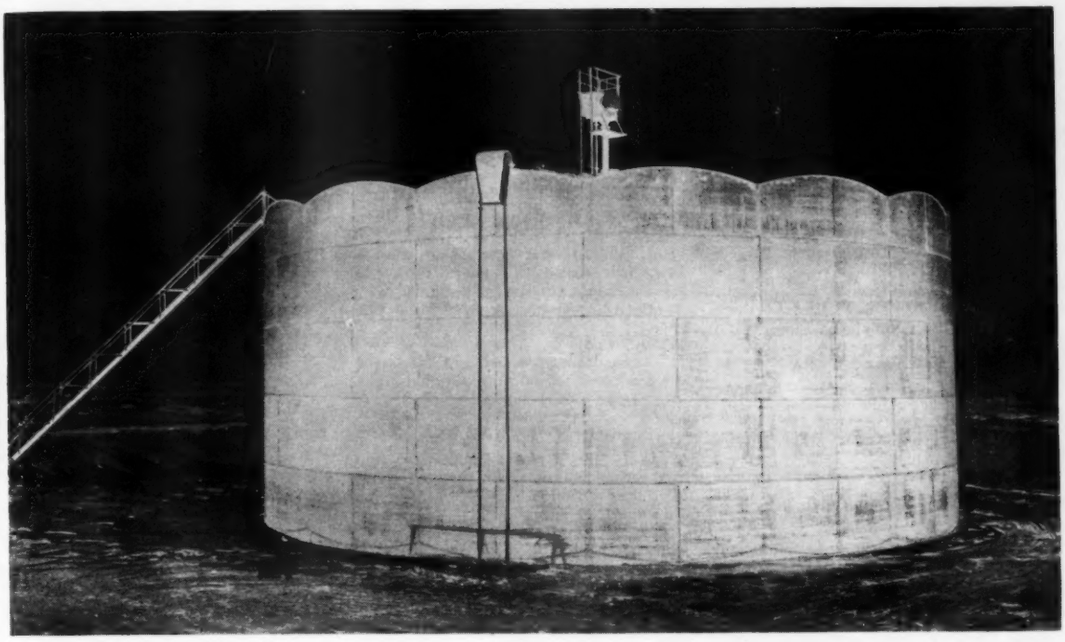
### GEARENCH MANUFACTURING CO.

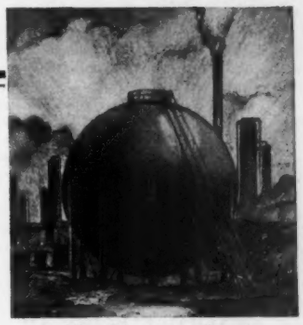
**Booths 16-17, Texas Bldg.**

Gearench Manufacturing Co., P.O. Box

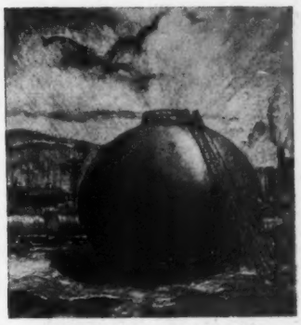
# A TYPE OF STORAGE TANK

## —to meet every evaporation problem





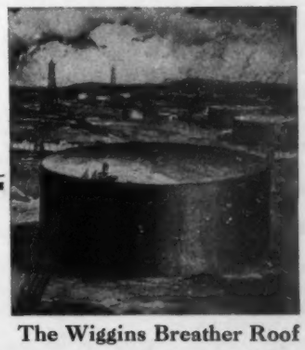
« « The Hortonsphere » »



« « The Hortonspheroid » »

« The Radial Cone Tank »

The Wiggins Pontoon Roof



The Wiggins Breather Roof

# Stopping an Estimated Loss of 18 Per Cent Per Year

EVAPORATION loss from oil stored in gas tight steel cone roofed tanks increases rapidly as the Reid vapor pressure increases. The average rate of loss for natural gasoline with a 20 lb. vapor pressure is about 1½% per month or 18% per year when the tank is equipped with pressure vents and sprayed with water. For large tanks, this loss obviously assumes serious proportions.

### *A New Pressure Unit*

To meet the problem outlined above, the new Radial Cone tank has been developed. It offers storage capacity at a lower unit cost than other types of pressure storage and is readily built in large sizes. It is suited for internal pressures of 1 to 10 lb. For example, the 20 lb. natural gasoline referred to could be stored in one of these tanks with the vent set for 6 lb., and practically the entire 18% loss would be eliminated.

### *Houston Installation*

In fact this is exactly what is being done in two of these tanks, which were built for the Warren Petroleum Company at Houston, Texas. Casinghead gasolines with a Reid vapor pressure ranging from 14 to 22 lb. are received at this point in tank cars from Oklahoma and Texas and stored in these tanks before shipping to refineries. One of these tanks has a capacity of 38,000 bbl. and the other holds 55,000 bbl.

### *Design Features*

The radial cone design consists of a series of radial girders extending from the tank shell to the center of the structure. The plates between these girders are dished to form a portion of a cone between adjacent girders. The bottoms of the Warren tanks rest directly on a sand cushion. The bottom and top are of the same construction except in inverted position. They are designed for a full liquid load and a maximum internal gas pressure of 6 lb. or any combination of partial liquid and gas loads.

A special type of vent is used, consisting of a large liquid reservoir with a tall riser. As pressure in the tank builds up the liquid is forced up into the riser, which at 6 lb. pressure lifts a float and vents the excess pressure. The vacuum vent is a simple liquid sealed cup in the main body of the vent.

### *Our Special Service*

The development of this new pressure tank is typical of the work which we do to solve problems in stopping evaporation loss. Our experience with a wide variety of conditions under which oil is stored enables us to offer constructive help when you are considering additions to or changes in your storage facilities. Send us the characteristics of the product to be stored, the total capacity needed and whether you have old tanks suitable for conversion or re-roofing. With such data we will gladly—and without any obligation—submit comparative cost estimates and show you by test data what savings you may expect.

## CHICAGO BRIDGE & IRON WORKS

| | | | | | |
|---|---|---|---|---|---|
| DALLAS | 1241 Burt Bldg. | CHICAGO | 2128 Old Colony Bldg. | PHILADELPHIA | 1615 1700 Walnut St. Bldg. |
| HOUSTON | 2919 Main Street | DETROIT | 1514 Lafayette Bldg. | BOSTON | 1517 Consolidated Gas Bldg. |
| TULSA | 1606 Thompson Bldg. | CLEVELAND | 2204 Rockefeller Bldg. | SAN FRANCISCO | 1054 Rialto Bldg. |
| BIRMINGHAM | 1536 Fiftieth St., N. | NEW YORK | 3347-165 Broadway Bldg. | LOS ANGELES | 1423 Wm. Fox Bldg. |

*Fabricating Plants in BIRMINGHAM, CHICAGO and GREENVILLE, PA.*

1221, Houston, Tex., is exhibiting in Booths 16 and 17 in the Texas Building, with C. E. Olsen, vice president and general manager, L. D. Hilton, E. R. Casey and M. T. Kappele, representatives, in attendance.

The exhibit features the following products: Petol tubing, pipe, chain, friction, stabbing, welding, back-up, machine, bull, casing and carrying tongs, Petol carrying bars, Petol pipe wrench and Petol sucker rod wrench. All of our different types of tongs except the tubing tongs and pipe tongs have been developed since the last oil show and the tubing tongs and pipe tongs have also been much improved; therefore, we are sure that all of our products will be of special interest at the show in as much as their many safety features are something new in the oil industry.

### GENERAL ELECTRIC CO.

**Booths 134-135, Texas Bldg.**

The General Electric Co., Schenectady, N, Y., is exhibiting in Booths 134 and 135 in the Texas Building, with A. L. Jones, Jr., R. L. Middleton and E. F. Patterson of Tulsa; F. B. Hathaway and R. Randall of Oklahoma City; R. T. Shiels, G. R. Prout and L. T. Blaisdell of Dallas, Tex., in attendance.

The exhibit features triple-rated splash proof motor and control equipment for oil well pumping, electric time switch, explosion proof motor and control equipment, floodlights, wire and cable, electric welding equipment, industrial heating equipment, new type I-20 watthour meters, thrustor, oil immersed motor control equipment, lightning arrestors and open and enclosed fuse cutouts.

A complete line of General Electric welding equipment will be displayed by the Welders Supply Co.

### GENERAL METALLIZING CO.

**Block C, on Grounds.**

The General Metallizing Co., 517 West Archer, Street, Tulsa, Okla., is exhibiting in Block C, on grounds with H. R. Leland and C. W. Jones in attendance.

The exhibit features the demonstration of the Metallizer, a small tool used in the spraying of the molten metals to various surfaces to prevent corrosion and erosion occurring from existing acids.

There will be a lathe erected for grinding and metallizing pump shafts, compressor rods, valves and various other articles. These surfaces are undercut to a certain diameter before metallizing and then the metal applied and surfaces ground to the finished diameter leaving a highly-polished surface, the same as when new.

Numerous samples of work done in our shop will be on display.

An actual demonstration of the work will be given at all times during the show.

### GENERAL PAINT CORP.

**Booths 38-39, Texas Bldg.**

The General Paint Corp., Tulsa, Okla., is exhibiting in Booths 38-39 in the Texas Building, with C. V. Zehrung and Ainslie Perrault in attendance.

The exhibit features L. & S. Portland Cement Paint, both regular and the new sand finish, a new method of applying a new finish to industrial buildings.

In addition we will feature Biturine Pipe Line Enamels and mill coated and wrapped pipe by the Hill, Hubbell method, together with several other new and distinctive types of industrial paint finishes recently developed by the company.

### GENERAL PORCELAIN ENAMELING & MANUFACTURING CO.

**Booth 30, Refiners and Marketers Bldg.**

The General Porcelain Enameling & Manufacturing Co., Chicago, Ill., is exhibiting in Booth 30 in the Refiners and Marketers Building, with A. M. Culmore in attendance.

The exhibit features porcelain signs for oil companies.

### GINTER CHEMICAL LABORATORY

**Booth 55, Scientific and Technical Bldg.**

The Ginter Chemical Laboratory, Tulsa, Okla., is exhibiting in Booth No. 55, Scientific and Technical Building with Roy L. Ginter in attendance.

This exhibit features photographs of

complete core analysis and permeability determination equipment recently installed at the laboratory in Tulsa. The scope of the work that can be done covers detailed study of cores, determining permeability, porosity, saturation, grain size and chemical examination of cementing materials.

### GLOBE STEEL TUBES CO.

**Booth 61, Oklahoma Bldg.**

The Globe Steel Tubes Co., 3839 West Burnham Street, Milwaukee, Wis., is exhibiting in Booth 61 in the Oklahoma Building, with F. J. O'Brien, president; J. W. Floto, vice president, and E. C. Carroll, manager of sales, Mid-Continent Field, in attendance.

The exhibit features sections of tubing as made on the new Foren mill, which is a continuous bar rolling mill used in the manufacture of seamless steel tubes. This mill has been in operation about two months and represents the latest development in the seamless tubing industry.

Samples of boiler tubes, condenser tubes, plain and lined still tubes, carbon steel still tubes with welded on ends of 5 per cent chrome steel.

### GOODRICH ELECTRIC CO.

**Booth 41, Refiners and Marketers Bldg.**

The Goodrich Electric Co., 2901-35 North Oakley Avenue, Chicago, Ill., is exhibiting in Booth 41 in the Refiners and Marketers Building, with W. J. Goodrich and L. R. Jorgenson in attendance.

The exhibit features open and closed types of floodlights, spotlights, vaporproof lighting fixtures, angle reflectors for the illumination of signs, a complete line of industrial lighting fixtures including the new pump island light for gasoline service stations.

### A. P. GREEN FIRE BRICK CO.

**Booth 56, Scientific and Technical Bldg.**

The A. P. Green Fire Brick Co., Mexico, Mo., is exhibiting in Booth 56 in the Scientific and Technical Building, with J. H. Stayer, R. M. Dillard, A. G. Kline and H. B. Plunkett in attendance.

The exhibit features diaspore and fire clay refractories applicable to oil field refineries and general and special furnace uses. Also crude and finished products. A complete line of plastic fire brick, high temperature cements, and other specialties.

Literature, samples and information regarding application of these products will be available for visitors.

### GROLIER SOCIETY OF LONDON

**Booth 71, Texas Bldg.**

The Book of Knowledge Co., 215 Pershing Road, Kansas City, Mo., is exhibiting in Booth 71 in the Texas Building, with H. A. Little, J. A. McKee, H. L. Trant and F. L. Shutt in attendance.

The exhibit features "Book of Knowledge" in 20 volumes, "Lands and People" and "The World in Color" in seven volumes.

### GUIBERSON CORP.

**Booths 123-124, Texas Bldg., and on Outside Space on Grounds.**

The Guiberson Corp., Dallas, Tex., is exhibiting in Booths 123-124 Texas Building, and on space outside on grounds with J. C. Owen and H. R. Standlee, Tulsa, in attendance.

The exhibit features tubing catchers, packers, tubing spiders, new type disc bits, oil savers, swabs, and a complete supply of literature describing all Guiberson products.

A motion picture showing the running of a record string of 9,972 feet of 2½-inch upset Jones and Laughlin Co. tubing in Denver Producing & Refining Co.'s No. 1 A-Dah-Noe well near Binger, Okla. Two Guiberson tubing catchers were used on this long string of tubing, also Guiberson tubing spiders.

### GUIBERSON-DIESEL ENGINE CO.

**Dallas, Tex.**

**Booths 106 and 107, Texas Bldg.**

### GEUDER, PAESCHKE & FREY CO.

**Booth 17, Refiners and Marketers Bldg.**

The Geuder, Paeschke & Frey Co., Fifteenth and St. Paul Avenue, Milwaukee, Wis., is exhibiting in Booth 17 in the Refiners and Marketers Building, with A. J. Chamberlain, manager, in attendance.

The exhibit features a line of steel pails and drums for oils, grease, paints, chemical and various other liquid products.

### GOULDS PUMPS, INC.

**Outside on Grounds.**

The Goulds Pumps, Inc., Seneca Falls, N. Y., is exhibiting with McIntosh and Seymour Co. and the De la Vergne Engine Co., outside on the grounds with R. T. Roberts, Tulsa, in attendance.

This exhibit features a pump that has proven eminently successful for 24-hour service both on crude oil and gasoline pipe lines. Its wide range of operating characteristics make it particularly adaptable for either direct connection to electric motors or through reducer gearing to Diesel engines.

### GREENFIELD TAP & DIE CORP.

**Gates Hardware Co. Bldg.**

**Outside Space on Grounds**

### HALLIBURTON OIL WELL CEMENTING CO.

**Outside Space on Grounds**

The Halliburton Oil Well Cementing Co., Duncan, Okla., is exhibiting in outside space on the grounds, with C. P. Parsons and Mr. Hovis in attendance.

The exhibit features the well-known Halliburton line of oil well cementing equipment, together with Multiple Stage Cementing devices, and other products for finishing and producing oil and gas wells.

### HANDY GOVERNOR CORP.

**Booth 19, Oklahoma Bldg.**

The Handy Governor Corp., Detroit, Mich., is exhibiting in Booth 19 in the Oklahoma Building, with R. E. Day and M. C. Elworthy of Magneto Ignition Co., of Tulsa, in attendance.

The exhibit features Handy perfection oil bath air cleaner, Servo mechanical governors, Handy governors for cars, trucks, and tractors; also the new Handy self-cleaning oilfilter. Cut-out models, which will be in operation, will enable visitors to see just how these instruments function.

### HANLON-WATERS, INC.

**Booth 111, Texas Bldg.**

Hanlon-Waters, Inc., 718 National Bank of Tulsa Building, Tulsa, is exhibiting in Booth 111 in the Texas Building, with M. F. Waters, Ches Herndon, L. J. Griffey and G. N. La Mont in attendance.

The exhibit features Victaulic pipe couplings, American air filters, Hanlon-Waters oil and gas separators, bolted tanks, load binders, gauge cocks, and automatic pressure and liquid level control equipment.

### HANNA ENGINEERING CO.

**Chicago, Ill.**

**Booths 29 and 30, Texas Bldg.**

### HANNIFIN MANUFACTURING CO.

**Chicago, Ill.**

**Booths 29 and 30, Texas Bldg.**

### HAPPY BELTING CO.

**Booths 1-2, Oklahoma Bldg.**

The Happy Belting Co., Tulsa, is exhibiting in Booths 1 and 2 in the Oklahoma Building, with Paul E. Mahaffey, A. F. Nixon, R. C. Lindley, A. M. Butcher, L. C. King, W. H. Gorey and Joseph W. Royer in attendance.

The exhibit features Happy screw type vertical belt tightener with the latest features, showing the hollow shaft type for adjustment of pulley while in operation. Also a miniature display showing our No. 2 Happy screw type tightener and our No. 4 Happy rack and pinion type tighteners in operation; Happy-Medart Timken equipped pillow blocks and heavy oil field type pulleys, and also Happy valve cups, balls and seats and Happy perfect grip belt dressing.

### HARDSOCG WONDER DRILL CO.

**Ottumwa, Iowa**

**Booths 29 and 30, Texas Bldg.**

### HARNISCHFEGER CORP.

**Booth 63, Oklahoma Bldg.**

The Harnischfeger Corp., Milwaukee, Wis., is exhibiting in Booth 63 in the Oklahoma Building, with G. L. Drake in attendance.

The exhibit features a 300 ampere electric welder in action demonstrating the application of the new P. & H-Hansen arc torch in fabricating copper, brass and bronze. The new P. & H. Nema motors will also be exhibited.

### HAYNES STELLITE CO.

**Booths 19-20-21, Texas Bldg.**

The Haynes Stellite Co., Kokomo, Ind., is exhibiting in Booths 19, 20, and 21 in the Texas Building, with W. S. Tromley, E. E. LeVan, R. L. Lerch, W. S. Winn, and V. H. Van Diver in attendance.

The exhibit features a complete line of hard-facing materials including Haynes Stellite, Haystellite inserts and Haystellite composite rod for hard-setting drill bits and the Hastelloys, a series of corrosion resistant alloys.

Haystellite is the cast tungsten carbide diamond substitute for hard-setting drill bits. The number of feet of hole drilled with one Haystellited bit is increased several times over bits not hard-set.

One feature of the exhibit will be an estimating contest. A jar filled with Haystellite inserts for use in hard-setting oil well drilling bits will be shown at the booth. Visitors will be invited to estimate the number of additional feet of hole represented by the inserts contained in a jar. A complete Oxweld welding outfit will be awarded as a prize for the most accurate estimate. To aid contestants, a used bit hard-set with Haystellite will be displayed with its record of hole drilled and a comparative record in the same formation of a bit not hard-set with Haystellite. With these comparisons it will take only a simple bit of calculation to reach an estimate, and persons inexperienced in oil well drilling practices will not be handicapped.

The comparative corrosion resistance of Hastelloy "A," one of Haynes Stellite Co.'s series of corrosion resistant alloys, and ordinary steel will be demonstrated. A wire of each of these materials will be suspended in a tank of hydrochloric acid. The steel wire will be eaten away daily whereas the Hastelloy wire if left in the acid continuously would last well into the next century.

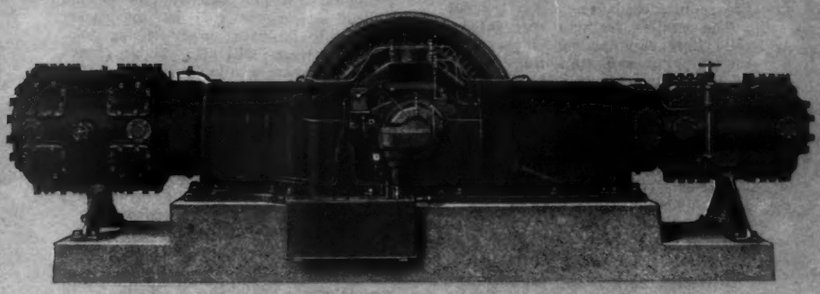
Needle valves, angle valves, gate valves and similar wearing parts hard-surfaced with Haynes Stellite will also be shown.

### HAYS CORP.

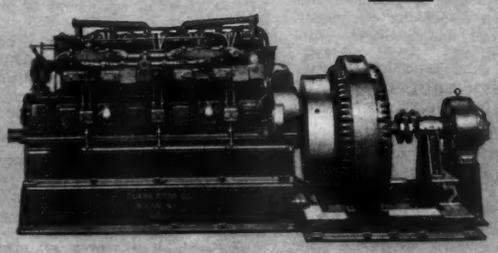
**Michigan City, Ind.**

**Booths 8 and 9, Scientific and Technical Bldg.**

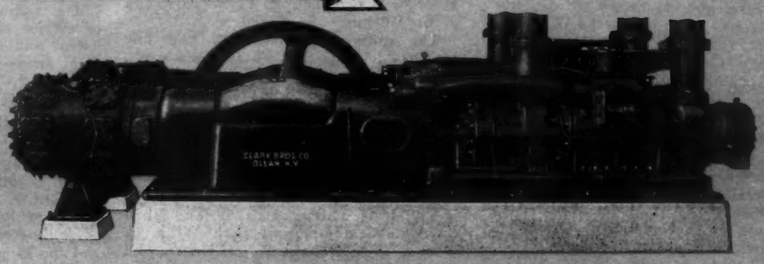
# EFFICIENT • ACCESSIBLE • DURABLE



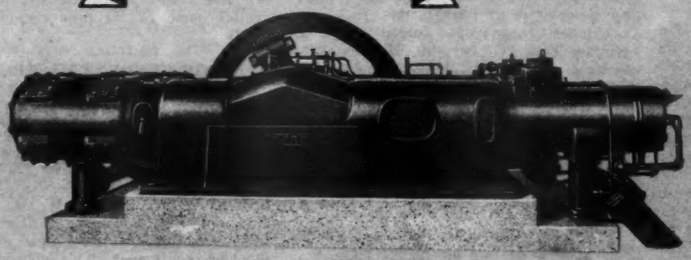
Balanced Opposed Motor Driven Compressor



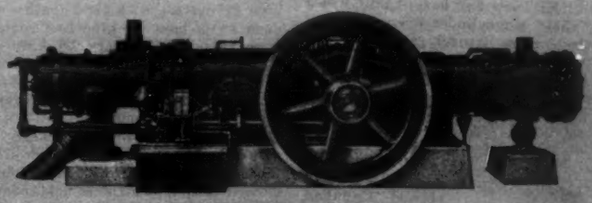
6-Cylinder Gas Engine Generator Unit



400 B.H.P. Double Acting Twin—Overhead Exhaust

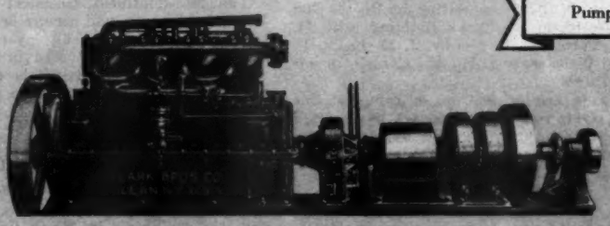


200 or 230 H. P. Twin Compressor with Inverted or Bottom Exhaust

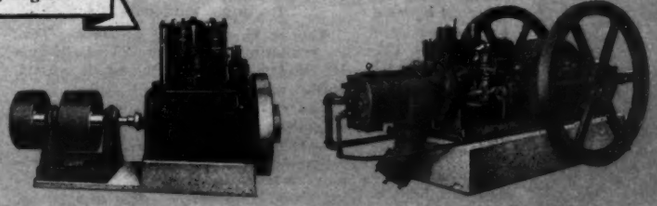


100 or 115 H. P. Single Compressor with Inverted or Bottom Exhaust

Vertical 2-Cycle Pumping Engine



Senior Drilling Engine with Two-Speed Clutch



Model PC Convertible Engine

CLARK

### HAZARD WIRE ROPE CO.

**Booth 27, Texas Bldg.**

The Hazard Wire Rope Co., Inc., 81 East Ross Street, Wilkes-Barre, Pa., is exhibiting in Booth 27 in the Texas Building, with W. W. Runkle and E. C. Troutman in attendance.

The exhibit features Lay-Set rotary drilling lines, standard cable tool drilling lines, sand lines, nonrotating tubing lines and Korodless stainless steel ropes. Also exhibit illustrating processes of manufacture of rope.

### HEDGE-WALSH-WEIDNER CO.

**Chattanooga, Tenn.**

**Booth 2, Texas Bldg.**

With Combustion Engineering Co.

### HEINE BOILER CO., INC.

**New York City, N. Y.**

**Booth 2, Texas Bldg.**

With Combustion Engineering Co.

### HERCULES MOTORS CORP.

**Booths 76-77-134-135, Oklahoma Bldg.**

The Hercules Motors Corp., Canton, Ohio, is exhibiting in Booths 76, 77, 134 and 135, Oklahoma Building, with John Carnahan, Canton, Ohio, in attendance.

The exhibit features models of heavy duty Hercules engines and power units as arranged specifically for gasoline engine applications.

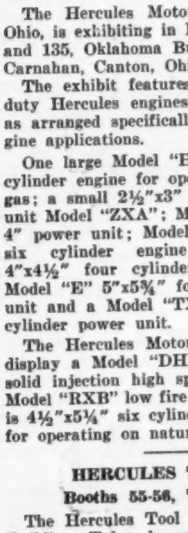
One large Model "HXE" 5¾"x6" six cylinder engine for operation on natural gas; a small 2½"x3" heavy duty power unit Model "ZXA"; Model "IXB" 3¼"x 4" power unit; Model "WCX" 4"x4½" six cylinder engine; Model "OOC" 4"x4½" four cylinder power unit; a Model "E" 5"x5¾" four cylinder power unit and a Model "TXO" 6⅜"x7" four cylinder power unit.

The Hercules Motors Corp. will also display a Model "DHXB" Diesel 5"x6" solid injection high speed engine and a Model "RXB" low fire hazard unit which is 4½"x5¼" six cylinder open type unit for operating on natural gas.

### HERCULES TOOL CO.

**Booths 55-56, Texas Bldg.**

The Hercules Tool Co., 429 Kennedy Building, Tulsa, is exhibiting in Booths 55 and 56 in the Texas Building, with S. P. Tschappat, Harold Callahan and L. C. Rhoads in attendance.



The exhibit features Hercules tubing hangers, tubing supports, upset thread pumping and flowing tees, tubing heads, high pressure, forged steel, flow heads, standard cast steel casing heads, high pressure forged steel casing heads, bradenheads, tubing anchors, tubing oil savers, tubing spiders, tubing rotators and casinghead adapters.

The Hercules Tool Co. is also showing their OC type tubing head made with a one-piece forged steel body. Inside diameter is the same as the casing on which it is used. The slip assembly which supports the tubing is made up in one unit with a packing ring insert, and can be used as a blowout preventer. Steel and rubber packing rings are compressed down on top of the slips by a packing nut that screws down into the top of tubing head. There is a standard casing thread on outside at top of the tubing head.

### HILL-HUBBELL & CO.

**Tulsa, Okla.**

**Booths 38 and 39, Texas Bldg.**

With General Paint Corp.

### HINDE & DAUCH PAPER CO. AND KANSAS CITY FIBRE BOX CO.

**Booth 55, Refiners and Marketers Bldg.**

The Hinde & Dauch Paper Co., Sandusky, Ohio, and Kansas City Fibre Box Co., Kansas City, Kans., is exhibiting in Booth 55 in the Refiners & Marketers Building, with Thomas H. Gagen, C. E. Race, C. A. Roberson and James A. Cleary in attendance.

The exhibit features corrugated and solid fibre shipping containers used for the shipping and marketing of canned oil in quarts, gallons and other popular sizes. The newest feature of these boxes is in the printing of guide lines on three sides of the box, which permits the box to be cut open and used as a display stand for the contest. Printing of the boxes in attractive color combinations and designs is also being sold to large refiners.

### HINDERLITER TOOL CO.

**Booths 22 and 23, Texas Bldg.**

The Hinderliter Tool Co., Tulsa, is exhibiting in Booths 22 and 23 in the Texas Building, with Frank Hinderliter, Herman Hendershot, A. L. Stewart, and J. J. Middaugh in attendance.

The exhibit features high and low pressure hookups for oil and gas wells, leakproof rotary tool joints, and drill collars, and whipstocks for both cable and rotary tools.

### HOBART BROTHERS CO.

**Booths 48, 49, and 50, Oklahoma Bldg.**

The Hobart Brothers Co., Troy, Ohio, is exhibiting in Booths 48, 49, and 50 in the Oklahoma Building, with Willis C. Brown, E. A. Hobart, W. H. Hobart and W. J. Chaffee in attendance.

The exhibit features various models of electric arc welders employing "Diverted Pole" design originally developed for the United States Navy.

Three models are displayed: A self-contained 300 ampere 12 k.w. gasoline engine driven set with road trailer chassis, such as is used by pipe line companies; a portable 400 ampere 16 k.w. electric motor driven unit, for refinery construction and repairs and heavy tank fabrication; and a 200 ampere 8 k.w. generator unit for lighter welding.

These models are all designed for 40 volt shielded arc welding, as well as for 20 volt bare wire work. The Hobart exclusive remote control is a standard feature.

A welding booth is provided where demonstrations are given by the factory welding operator, Robert Bercaw.

### O. H. HOLMAN CO.

**Booth 25, California Bldg.**

The O. H. Holman Co., Dallas, Tex., is exhibiting in Booth 25, California Building with O. H. Holman in attendance.

The exhibit features a complete line of roller and silent chains featuring a new type antiwhip chain which practically eliminates the "whip" in chains running on pulsating drives, greatly increasing their efficiency.

### CHARLES N. HOUGH MFG. CO.

**Booth 40, California Bldg.**

The Charles N. Hough Manufacturing Co., Franklin, Pa., is exhibiting in Booth 40 in the California Building, with C.

O. Shumaker, C. N. Hough, Frank L. Scott, C. S. Vogel, and O. J. Thompson in attendance.

The exhibit features Huf-Duo insert pumps of the inverted type. The outside tube with the upper connection and the tube guide is the moving part of the unit. The plunger fitting and the lower valve are connected by the plunger tube and remain stationary when the pump is in operation.

Huf-Supersize pump is a large capacity insert type working barrel and is a complete unit and can be run in and pulled out of the well on the sucker rods and eliminates many tubing jobs.

The company will also exhibit Hough balls and seats available in five different types for application to individual well requirements.

In addition to these products copies of a handsome new catalog, covering every item of equipment manufactured by this company will be available for those interested.

### HUFFMAN MANUFACTURING CO.

**Booth 57, Refiners and Marketers Bldg.**

The Huffman Manufacturing Co., Dayton, Ohio, is exhibiting in Booth 57 in the Refiners and Marketers Building, with J. B. Holtson, vice president, in attendance.

The exhibit features a complete line of service station dispensing equipment, valves and fittings, and Sealdoyl equipment for packaged oil.

### HUGHES TOOL CO.

**Booths 91-92, Texas Bldg.**

The Hughes Tool Co., Houston, Tex., is exhibiting in Booths 91 and 92 in the Texas Building with S. P. Brown in attendance.

The exhibit features the complete line of drilling equipment, valves and fittings and the Hughes plunger lift pumping device made by this company.

Both the Hughes two-cone and three-cone roller bearing rock bits are of forged steel, unit type construction, and require no accessories or spare parts.

Hughes three-point forged reamers, Hughes Type "C" core bit, Hughes automatic type core bits, Hughes tool joints, drill collars, Hughes valves and fittings and Hughes (Brown) safety tubing head.

A working model of the Hughes plunger lift will be on display illustrating the principles of this method of producing oil wells of any depth .

### HUNTER PRESSED STEEL CO.

**Lansdale, Pa.**

**Booths 29 and 30, Texas Bldg.**

### HYATT ROLLER BEARING CO.

**Booths 108-109, Texas Bldg.**

The Hyatt Roller Bearing Co., Harrison, N. J., is exhibiting in Booths 108 and 109 in the Texas Building, with H. K. Porter, C. L. Newby, J. M. Kelly, F. H. Webster and H. M. Carroll in attendance.

This exhibit features a complete line of Hyatt roller bearings such as are used in drilling, pumping and haulage equipment for the oil fields.

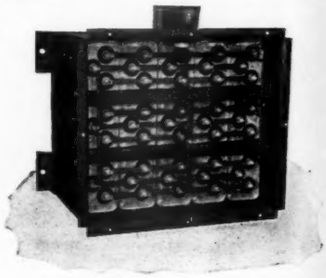
### IDEAL ELECTRIC CO.

**Block "G" on Grounds.**

The Ideal Electric & Manufacturing Co., East First and Oak Streets, Mansfield, Ohio, is exhibiting in Block "G" in

the Cooper-Bessemer Building with Max E. Landry, district representative, and F. L. Hanson, sales manager, in attendance.

The exhibit features an automatic demonstration panel showing how power factor correction effects live current of a motor. A Noel Polyphase Capacitor motor. A ¾ sectionalized motor, a totally-enclosed fan-cooled motor, a splash-proof motor, a capacitor for power factor correction, and a group of parts showing various construction features. A small telegraph motor-generator set as used for communication work will also be shown.



A large display stand is used to show about 200 photos of Ideal motor, generator and control equipment. Installations in many prominent plants are shown as well as views of equipment in process of manufacture.

Also an Ideal motor will be shown driving a complete oil well pumping outfit. This exhibit will be in operation.

### ILLINOIS STEEL CO.

**Booth 116, Oklahoma Bldg.**

The Illinois Steel Co., Chicago, Ill., is exhibiting in Booth 116, Oklahoma Building with William Griffiths and Mark Chapman and Jerome F. McGee in attendance.

The exhibit features stainless steels sold under the trade name of U. S. S. series the most commonly used grades being USS-18-8 and USS-17. The American Sheet and Tin Plate Co. will also exhibit some of its products in this booth.

### INDEPENDENT-EASTERN TORPEDO CO.

**Block "H" on the grounds.**

The Independent-Eastern Torpedo Co., 619 East Fourth Street, Tulsa, Oklahoma, is exhibiting in Block "H" on the grounds with C. K. Abbott, W. N. Strong, W. H. Swartz, W. M. McFarland and C. C. Eshelman in attendance.

The exhibit features new oil well shooting equipment. This consists of a shooting car which is equipped with stationary reels powered by take-off on the motor; also with new and improved measuring and shot weighing devices.

The Mid-Continent Chemical Co., of Eldorado, Kansas, will occupy half of the space and will have on display an outfit showing the equipment used in treating wells with acid. The truck is equipped with an acid storage tank and a pressure pump used in pumping the acid into the well.

### INGERSOLL-RAND, INC.

**Booth 55, Oklahoma Bldg.**

The Ingersoll-Rand, Inc., New York City, is exhibiting in Booth 55 in the Oklahoma Building, with Fred J. Wetzel, Fred W. Sultan, Jr., Drew T. Whiting, K. P. Hurley, W. M. Gobo and R. C. Beyer in attendance.

The exhibit features a 370-foot oil engine driven two-stage portable air compressor featuring the Ingersoll-Rand type H low compression, four cycle oil engine and two-stage V construction air cooled compressing end. The engine and compressor is mounted on a cast steel frame and can be connected or disconnected by means of an internal expanding clutch.

Also a specially designed hot and cold or reflux pump of the Cameron type BJV. Literature and bulletins will be available for distribution covering the complete Ingersoll-Rand line of machinery.

### INTERNATIONAL HARVESTER CO. OF AMERICA

The International Harvester Co. of America, Chicago, Ill., is exhibiting in

outside space, with Tulsa Branch representatives, R. W. Elliott, R. L. Adams, Q. P. Shreck and C. G. Carrington in attendance.

The exhibit features in two spaces 30'x30' trucks of one-half ton to 5 tons capacity, and tractors from 20 to 60 horsepower, both in the wheel and crawler type.

Each truck and tractor will be equipped with some unit which makes them adaptable to oil field operation.

There will be pulling machines, electric welding equipment, pumps for acid treatment of oil wells, pipe booms for pipe line construction, and in general such attachments as will interest the oil men.

### INTERNATIONAL NICKEL CO.

**Booth 4, Texas Bldg.**

The International Nickel Co., Inc., 67 Wall Street, New York City, is exhibiting in Booth 4 in the Texas Building, with H. S. Lewis, J. S. Vanick, O. B. J. Fraser, A. G. Zima, W. J. Kirk, C. R. McGrail and C. H. Roper in attendance.

The International Nickel Co. manufactures no equipment used in the oil industry. Our interest in this field, while indirect, is an important one nevertheless, owing to the important extent to which nickel and its alloys are used in oil field tools and refinery equipment.

Our exhibit will comprise examples of the principal applications of nickel alloy steels, nickel castiron, pure nickel, monel metal, etc., as used in the products of leading manufacturers, and in the equipment used by leading oil companies. We will, also, display a moving picture film featuring the facilities of our research laboratories which are always at the disposal of those in the industry who have problems relating to improved materials.

### INTERNATIONAL DERRICK & EQUIPMENT CO.

**Open Space on Grounds**

The International Derrick & Equipment Co., 875 Michigan Avenue, Columbus, Ohio, is exhibiting in open space in center of grounds, with L. J. Brown, R. R. Bloss, C. G. Runkle, L. L. Powell, C. M. Powell, C. L. Lockett and B. Boykin, Jr., in attendance.

The exhibit features the International Derrick & Equipment Co.'s geared pumping units, including a double reduction, twin crank, 35-horsepower self-contained unit for individual well service, and a

single reduction, single crank, 100-horsepower unit equipped for multiple well service. The units will be in motion.

These units have a number of new features of construction. The new crank counterbalance, pitman, pitman oscillator, center irons, lead screw, mule head and polished rod grip are of particular interest in connection with the twin crank unit. The single crank unit is equipped with a new four-wing back-side crank, tripod samson post, beam retractor, roller bearing pitman, pitman stirrup oscillator, enclosed center irons, mule head, friction clutch and swing post with back-side pitman.

The gear case of a 55-horsepower unit will be open for inspection of the gear trains, bearings and lubrication system.

### INTERNATIONAL SUPPLY CO.

**Booth 4, Oklahoma Bldg.**

The International Supply Co., Tulsa, is exhibiting in Booth No. 4 in the Oklahoma Building with Roy E. Dow, R. W. Neal, D. F. Kelley and J. C. Mann in attendance.

No equipment will be on display but literature of the various lines of apparatus and machinery handled by International Supply Co., will be available for distribution.

### IVERSON TOOL CO.

**Booth 49, California Bldg.**

The Iverson Tool Co., 216 West Second Street, Tulsa, Okla., is exhibiting in Booth No. 49 in the California Building with P. M. Iverson, H. M. Lundquist W. A. Tipton and C. C. Hurlburt in attendance.

The exhibit features Iverson drilling and fishing tools, Whitehead Brothers hose, Anchor packings, Rockwood unions, Coffing hoists, A. C. F. lubricating valves, Taylor tubing tongs and Crowell products.

### JACOBS MANUFACTURING CO.

**Hartford, Conn.**

**Booths 29 and 30, Texas Bldg.**

### JARECKI MANUFACTURING CO.

**Booths 79-132, Texas Bldg.**

The Jarecki Manufacturing Co., executive offices and manufacturing plants, Erie, Pa.; general offices, Pittsburgh, Pa., and St. Louis, Mo., is exhibiting in Booths 79 and 132 in the Texas Building, with J. F. Eaton in charge; also W. B. Gray, R. M. Lee, J. F. Conley and C. Shupert in attendance.

The exhibit will be devoted principally to a display of Jarecki valves and fittings for various types of service in the petroleum industry, and to various Jarecki oil field specialties.

Brass, bronze, iron body and semi-steel gate and globe valves of all types and of all working pressures, cut sectionally to show the functioning of the various parts, and the construction.

Cast iron and malleable iron pipe fittings, of Jarecki manufacture, both screwed and flanged, of all types and working pressures, cut sectionally to show relative proportions of different weights of fittings, and the wall thicknesses used for various working pressures.

New items of Jarecki pumping equipment: A sucker rod box cleaner, a device to remove dirt and sand from the box end or coupling of sucker rods when running rods into a well.

A malleable iron pumping tee for 2-inch, 2½-inch and 3-inch regular and upset tubing, for connection between tubing, flow line and stuffing box on a pumping well. No subnipples or bushings required. All sizes of pumping tees have 1-inch bleeder connections.

A new type threadless hinged-bell nipple that clamps about the band of the pumping tee instead of screwing into the threads.

A new type threaded hinged-bell nipple, having a wide flat top on which the sucker rod elevators rest, instead of the usual round top.

The new Jarecki 1,000-pound test semi-steel double-disc gate valve and the new Jarecki extra heavy hydraulic malleable iron ground joint flange union, 1,500 and 1,200-pound working pressure.

The Jarecki "Erie Unloader" used to maintain a constant output pressure on an air compressor.

A continuous motion picture, illustrating the various steps taken in the manufacture of a malleable iron pipe fitting, and of a gate valve. These pictures were taken in the Jarecki Manufacturing Co.'s plants at Erie, Pa. Motion pictures of the following events and oil field operations of general interest will be shown: Connecting up and bringing in a well in the Crescent Pool, Logan County, Okla; taking the bottom-hole pressure of an oil well; and running and cementing casing in the Binger well, the Denver Producing & Refining Co.'s No. 1 A-Dah-Noe, in Caddo County, Oklahoma. Also miscellaneous oil field scenes of general interest.

The display of the Hewitt Rubber Corp. of Buffalo, N. Y., manufacturers of all kinds of mechanical rubber goods, will be exhibited in the Jarecki Manufacturing Co.'s booths, which company is Mid-Continent distributor for the Hewitt line. The display will demonstrate the differences in construction of straight-edge and folded-edge belts, the various ply thicknesses and widths available, as well as samples of rubber hose and packings used in the petroleum production and refining industry, with notations showing where and how each type is used.

There will be shown for the first time a new type of inserted oil well pump of new and improved construction, recently designed and built by the Engineering Co. of Tulsa.

### JEFFERY MANUFACTURING CO.

**Columbus, Ohio**

**Booth 56, California Bldg.**

### JOHNS-MANVILLE

**Booth 41, California Bldg.**

The Johns-Manville Co., New York City, is exhibiting in Booth 41 in the California Building with F. W. Hodson, S. H. Hinkley, L. A. King, M. E. Duncan and E. J. Liggett in attendance.

The exhibit features Johns-Manville transite pipe, Johns-Manville packing, Johns-Manville insulation, Johns-Manville acoustical treatment.

### THE S. M. JONES CO.

**Booth 18, Oklahoma Bldg.**

The S. M. Jones Co., Toledo, Ohio, is exhibiting in Booth 18 in the Oklahoma Building, with A. L. Meeks of Tulsa in attendance.

The exhibit features almost a half century of progress in the development of sucker and pull rods from old wooden rods through all the stages of development as made by the S. M. Jones Co.

### JONES & LAUGHLIN STEEL CORP.

**Booths 12-16, Oklahoma Bldg.**

The Jones & Laughlin Steel Corp., Pittsburgh, Pa., is exhibiting in Booths 12 and 16 in the Oklahoma Building, with F. D. Grunder, manager tube sales; A. E. Crockett, manager bureau of instructions; H. L. Miller, assistant manager, tube sales; M. C. Brown, manager tube sales, Pittsburgh, Pa., Pacific Coast Los Angeles, Calif.; W. R. K. Scott, metallurgical engineer, Pittsburgh; A. P. Holloway, district sales manager, Dallas, Tex.; Carl E. Swindler, representative, St. Louis, and H. P. Quinn, representative, Tulsa, in attendance.

The exhibit features J&L hot rolled seamless boiler tubes, seamless rotary drill pipe and seamless casing and tubing.

In addition to samples of J&L drill pipe, casing and tubing, each 30 feet long and in various sizes, Jones & Laughlin will have an exhibit showing the various stages through which J&L seamless casing passes in manufacture, from the solid billet to the finished product.

J&L hot rolled boiler tubes will be represented by 6-foot lengths of this product in various sizes presented in a manner that will permit easy inspection by visitors to the exposition. There will also be samples of J&L seamless still tubes, each 24 feet long.

Other samples will include one continuous 43-foot length of J&L seamless pipe, 1¼ inches in diameter, presented to show the superior coiling and bending properties of this product. There are no welds, either longitudinally or circumferentially, in this sample. Also on display will be 33 pieces of Jones & Laughlin pipe, both welded and seamless, showing different sizes, weights and finishes, from one-half to 4 inches in diameter.

Of equal interest will be the background against which these samples are to be presented. It is a specially built piece that includes two panels designed to show the more interesting operations in the manufacture of open hearth and Bessemer steel. The panels are modeled to scale fully mechanized and brilliantly illuminated.

### THE JOYCE-CRIDLAND CO.

**Booths 49-50, Texas Bldg.**

The Joyce-Cridland Co., Dayton, Ohio, is exhibiting in Booths 49-50 in the Texas Building, with H. B. Burlow and J. B. Sampson in attendance.

The exhibit features Joyce jacks—the complete line of Joyce industrial and heavy duty jacks for oil field service, featuring the No. 78 Joyce emergency jack, for motor truck and field service; the Joyce journal jacks for 25 and 35 tons capacity, for refinery service, and tne Joyce self-lowering and hydraulic jacks, for heavy duty oil field service and pulling casing.

We will also exhibit Joyce super automobile lifts, for handling passenger cars, buses and trucks. This exhibit will show our free wheel and drive-on lifts for air and electrical operation. Included in this exhibit will be shown the Joyce free wheeler jacks, designed for service with lifts or pits for removing body weight from springs for complete spring oiling, for insuring front end lubrication on certain types of cars, etc.

### K-W IGNITION CO.

**Cleveland, Ohio**

**Booth 19, Oklahoma Bldg.**

With Magneto Ignition Corp.

### KANSAS CITY FIBER BOX CO.

**Booth 55, Refiners and Marketers Bldg.**

With Hinde & Dauch Paper Co.

### KELLY AXE & TOOL WORKS

**Gates Hardware Co. Bldg.**

**Outside Space on Grounds**

### KEROTEST MANUFACTURING CO.

**Booth 51-52, Oklahoma Bldg.**

The Kerotest Manufacturing Co., 2525 Liberty Avenue, Pittsburgh, Pa., is exhibiting in Booths 51-52 in the Oklahoma Building, with Shep F. Miers, J. D. Isaacks, W. G. Swaney and C. C. Trees in attendance.

The exhibit features the latest developments in christmas trees, Gray-Kerotest master control valves and boll weevil assemblies. Also a full line of Kerotest christmas tree fittings, the latest in throttle valves, together with control choke valves and other specialties.

A full line of refinery valves, Series 150, 300, 400, 600, 900 and 1,500 will be shown, together with manganese molybdenum steel castings. There will be many new features in the Kerotest exhibit and it should be found of interest.

### KERR TURBINE CO.

**Jeanette, Pa.**

**Booth 111, Oklahoma Bldg.**

### KEY BOILER EQUIPMENT CO.

**Booths 65-66 Refiners and Marketers Bldg.**

The Key Boiler Equipment Co., East St. Louis, Mo., is exhibiting in Booths 65 and 66 in the Refiners and Marketers Building with Fred Key, E. A. Key, J. H. Richardson, G. A. Miller, M. J. Masel and M. B. Crowe in attendance.

The exhibit features models and full size fittings of 3,600, 6,500, 7,000 and 8,500 type tube connecting devices for the construction of heating coils. These are of the latest design and some one of the series of fittings is suitable to meet any working condition as respects pressures and temperatures.

### WALTER KIDDE & CO.

**Booth 59, Scientific and Technical Bldg.**

The Walter Kidde & Co., 140 Cedar Street, New York City, and Bloomfield, N. J., is exhibiting in Booth 59, Scientific and Technical Building, with Clifford Strain, New York City; H. E. Bowman, Houston, Tex.; Henry L. Phillips, Dallas; W. L. Walker and W. S. Walker, Tulsa, and Gordon Urquahart, Philadelphia, Pa., in attendance.

The exhibit features a complete line of Lux portable and wheeled extinguishers which are widely used to protect oil and electrical hazards at refineries and bulk plants, also on tank trucks.

The Lux extinguisher combines the effectiveness of three extinguishers in one unit. They put out oil and gasoline fires burning on a surface. They put out fires

# EMSCO

# CHROME VANADIUM OIL FIELD SPROCKET CHAIN

Now With
GREATER STRENGTH
For Deep Well Drilling

*No. 3B 90,000 lbs. Tensile*
*(Guaranteed to Run on A.P.I. Sprockets)*
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*Exclusive Emsco Feature*
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EMSCO
D+B
A Complete Line of Better Oil Well Equipment

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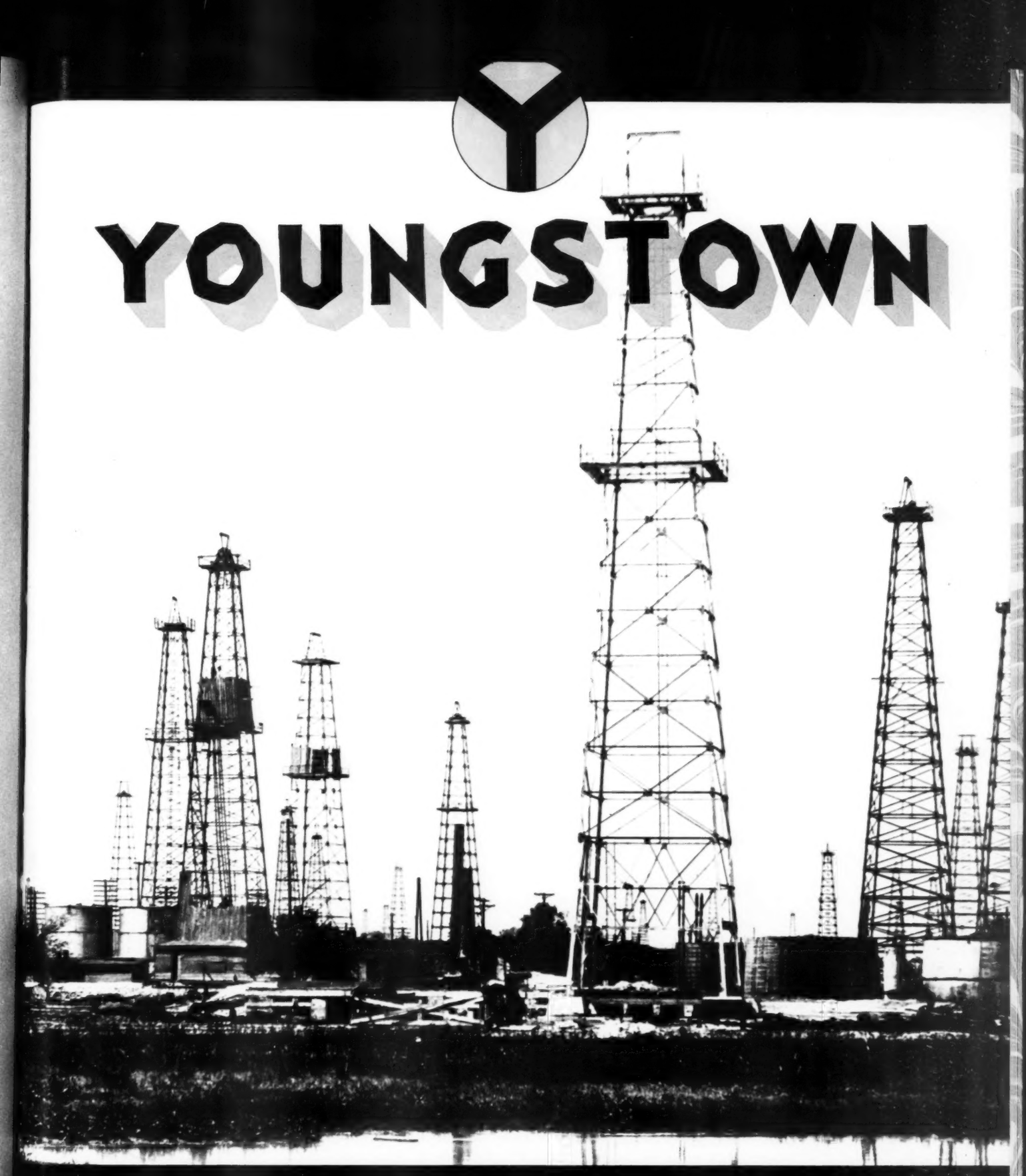
All Emsco Machinery And D+B Products Sold Exclusively In Mid-Continent Fields By The Continental Supply Company.

All Emsco Derricks And Derrick Equipment Sold Exclusively In The Mid-Continent By Emsco Derrick & Equipment Company; Continental Building, Dallas, Texas.

Export Office: Continental Emsco Co. Inc., 19 Rector Street, New York City.

XUM




## OIL COUNTRY TUBULAR GOODS

Whatever the drilling conditions may be, Youngstown oil country tubular goods always live up to their reputation for unsurpassed performance. No other drill pipe, casing or tubing can give greater protection to drilling investments.

THE YOUNGSTOWN SHEET AND TUBE COMPANY

Manufacturers of Carbon and Alloy Steels

General Offices - - - YOUNGSTOWN, OHIO

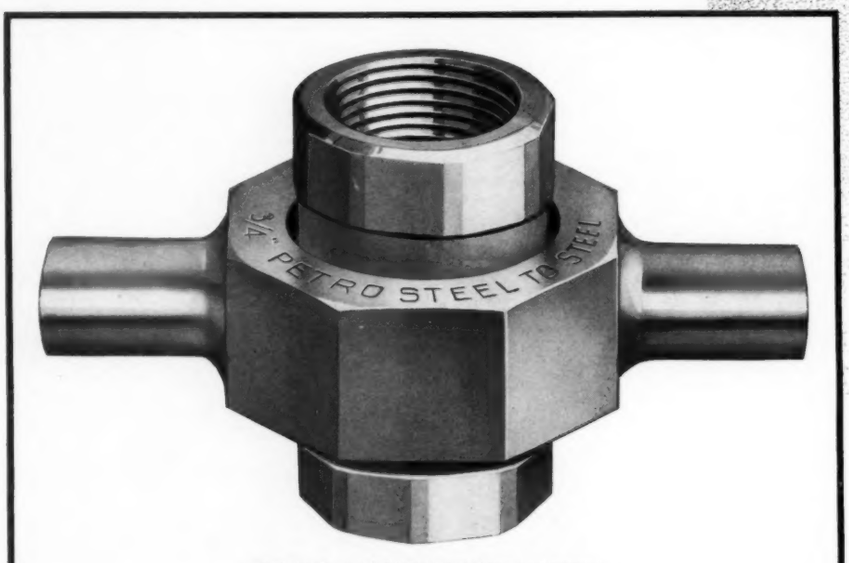
Youngstown's Pipe is distributed by --

THE CONTINENTAL SUPPLY COMPANY - - - - - Dallas Texas

REPUBLIC SUPPLY COMPANY OF CALIFORNIA - - - - Los Angeles

XUM

# FAST - CONVENIENT
# RUST - PROOF
# SPARK - PROOF




PETRO HANDLE-BAR UNION

Here's a union that fills a long felt need -- a union that can be attached or detached in a jiffy, without tools! A few twists of the handle bar, a light, sharp tap on the end of the handle and it's tight for 2000 lbs. cold working pressure!

Petro Handle-Bar Unions are forged from highest quality forging steel, finished with watch-like precision. Seats are machined and then rolled to a plate glass finish, and threads are accurately cut and perfectly matched. Rust proofed and spark-proofed with Udylite Cadmium.

Unequalled for any service where the line is connected and disconnected frequently, particularly for oil loading racks and hose connections.

For complete details on this time-saving, brute-strength union, write

*"Serving the Oil and Gas Industries"*

THE CONTINENTAL SUPPLY COMPANY

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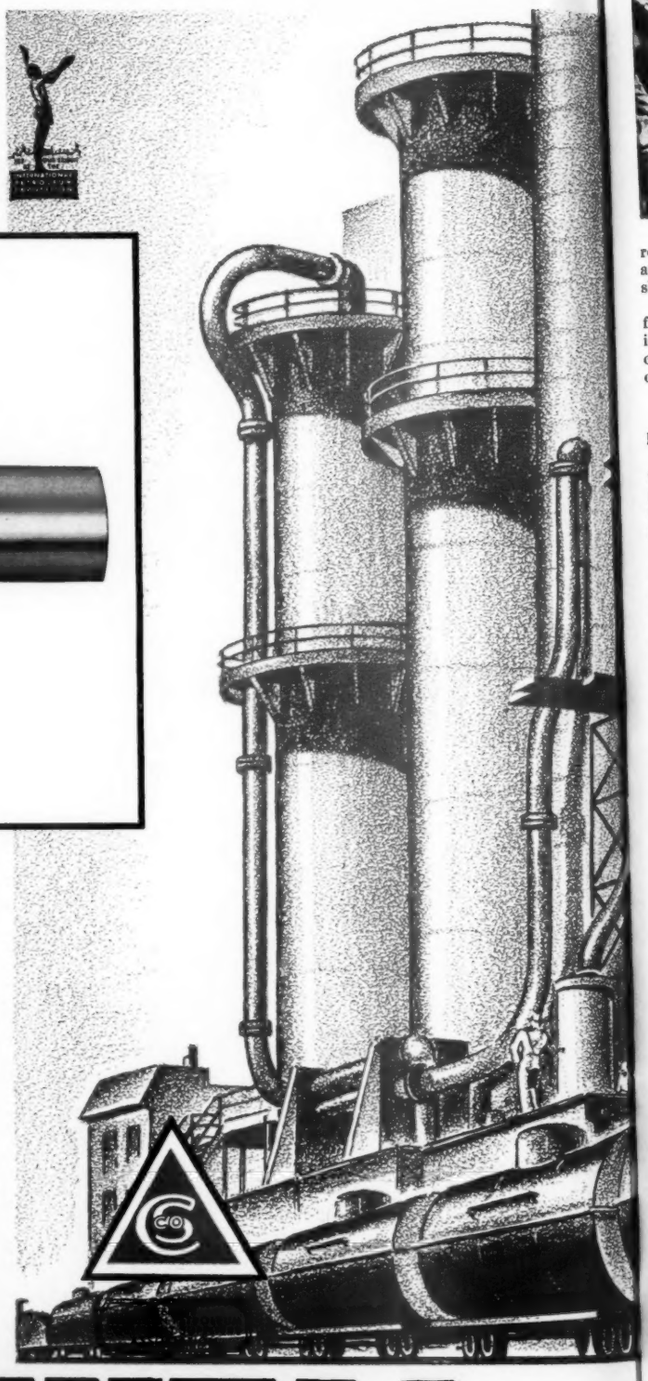


# CONTINENTAL

in gasoline streaming from a cracked fitting or overflowing tank truck, and they put out fires in live electrical apparatus safely.

A Lux permanently piped system, of the type being used to protect pump

rooms, centrifuge rooms and other hazardous spaces at refineries, is also being shown.

This system automatically extinguishes fires—no matter how severe—by flooding the protected space from floor to ceiling with flame-smothering carbon dioxide gas.

### KIELEY & MUELLER, INC.
**Booth 48, Scientific and Technical Bldg.**

The Kieley & Mueller, Inc., 34 West Thirteenth Street, New York City, is exhibiting in Booth 48 in the Scientific and Technical Building, with N. L. DeLear in attendance.

The exhibit features liquid level controllers with K&M Easy-to-Pack stuffing box and ball bearing spindle. Pressure regulating valves, back pressure regulators, relief valves, pump governors and steam traps.

### M. M. KINLEY CO.
**Booth 42, Oklahoma Bldg.**

The M. M. Kinley Co., Tulsa, and Houston, Tex., is exhibiting in Booth 42 in the Oklahoma Building, with M. M. Kinley and F. Hengst in attendance.

The exhibit features surveying instruments for bore holes and fire fighting apparatus used in fighting oil and gas well fires.

M. M. Kinley will put out a gas fire on the grounds using nitroglycerin to demonstrate the method he uses in fighting fires in the field.

### KOPPERS CONSTRUCTION CO.
**Booth 11, California Bldg.**

The Koppers Construction Co., Koppers Building, Pittsburgh, Pa., is exhibiting in Booth 11 in the California Building, with D. C. Agar and G. M. Carvlin in attendance.

The exhibit features a flow diagram showing the operation of the Koppers sodium phenolate purification process for removing hydrogen sulphide from refinery still gas, natural gas and gasoline.

The Koppers sodium phenolate process uses a special solution of sodium phenolate for the absorption of hydrogen sulphide. The solution is fairly concentrated and possesses a very high carrying capacity for hydrogen sulphide. The characteristics of this solution are such that the solution recirculation rate is less than 10 gallons per 1,000 cubic feet for the typical refinery gas.

### LAGONDA MANUFACTURING CO.
**Booth 111, Oklahoma Bldg.**

The Lagonda Manufacturing Co., Springfield, Ohio, is exhibiting in Booth No. 111 in the Oklahoma Building with H. A. Pastre, M. M. Sellers, W. E. Widow, C. C. Wilson and H. S. Pahren in attendance.

The exhibit features the latest tube-cleaning equipment for all sizes of straight and curved tubes of oil stills. Heavy duty, hi-powered, still cleaner motors of the air or steam type will be shown. Several different types of cutting heads will be exhibited.

This exhibit will be representative of tube cleaner equipment for all still-cleaning requirements.

### LANDIS MACHINE CO.
**Booths 6-7, Oklahoma Bldg.**

Landis Machine Co., Inc., Waynesboro, Pa., is exhibiting in Booths 6 and 7 in the Oklahoma Building, with R. G. Mumma, manger tap division; R. L. Moore, California representative; J. R. Funk, Texas and Oklahoma representative, and G. M. Stickell, assistant sales manager, in attendance.

The Landis exhibit consists of a new type pipe threading and cutting machine with receding chaser die head and lead screw attachment. This machine was publicly exhibited for the first time at the previous exposition but since that time the design of the machine, particularly around the cross rail and the taper attachment, has been changed. The Landis pipe threading and cutting machine with receding chaser die head is in actual operation, threading 6⅝-inch Grade C seamless drill pipe. This new machine was designed primarily for the cutting of oil country tubular threads and incorporates many distinctive features which will be found of particular interest to the production division of the oil industry.

The Landis exhibit also includes a number of the new Landis Style LT and Style LM taps. The outstanding feature of these new taps is the patented construction in which detachable tap heads of various capacities may be applied to the same tap body, thereby enabling the two to cover a remarkably wide range of sizes. Also their new hardened and ground thread cutting die heads.

### LEAVITT MACHINE CO.
**Booth 11, Oklahoma Bldg.**

The Leavitt Machine Co., Orange, Mass., is exhibiting in Booth No. 11 in the Oklahoma Building, with E. S. Hersey, sales engineer, in attendance.

The exhibit features Dexter Valve Reseating Machines and Swendeman Automatic Air Separators.

The Dexter Valve reseating machines are made for reseating globe valves, gate valves and for resurfacing pump valve seats. These machines are extensively used in the oil industry because the salvaging of valves means the savings of thousands of dollars to the industry. The exhibit shows the machines in actual operation.

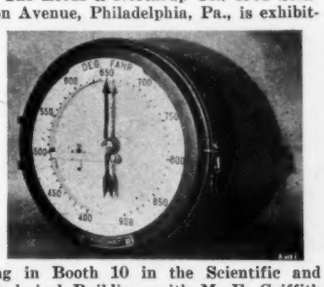
The Swendeman Automatic Separator is for removing water and oil from compressed-air lines. This separator is vented to the atmosphere and as the water and oil are precipitated, they are immediately discharged into the atmosphere. There is no pocket of water or oil formed to be picked up again by the air in motion. The exhibit explains the principle of operation and displays the different styles for the various air applications.

### MAX E. LANDRY
**Oklahoma City, Okla.**
**Outside Space on Grounds**

With Foote Brothers Gear & Machine Co.

### LEEDS & NORTHRUP CO.
**Booth 10, Scientific and Technical Bldg.**

The Leeds & Northrup Co., 4901 Stenton Avenue, Philadelphia, Pa., is exhibit-



ing in Booth 10 in the Scientific and Technical Building, with M. E. Griffith and G. C. Graf in attendance.

The exhibit features will be the new Micromax Round-Chart Indicating Recorder. In connection with it will be a small instrument which enables the observer to see how the machine works. Combining, as it does, the indicating and recording features, this machine is rapidly winning a firm position in the oil refining industry. It can be used to operate signals, if desired.

There will also be a Micromax Recording Controller, connected to a Type K Drive Unit. The equipment is widely used for automatic control of the temperature of towers, re-run lines, dewaxers, furnaces, and other refining units.

A Micromax 4-point Recorder will be in operation, with a demonstrating instrument attached which enables the user to see how the machine works. This recorder is very popular in oil refineries because it records on one chart all the significant temperatures of a refining unit or a series of units.

A deFlorez Controller, used for automatic regulation of coil outlet temperatures, will be exhibited.

### LELAND EQUIPMENT CO.
**Block "C," on Grounds**

The Leland Equipment Co., 515-519 West Archer Street, Tulsa, is exhibiting in Block "C" on grounds, with Harry Leland and Jim Russell in attendance.

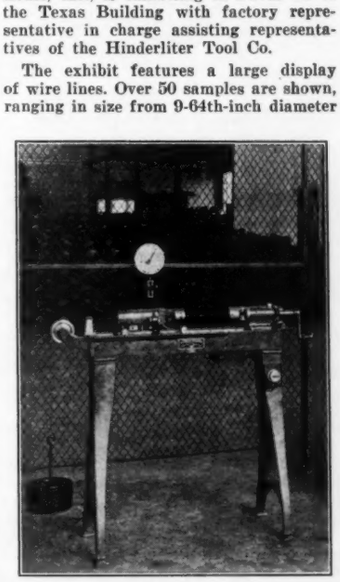
The exhibit features the latest and most advanced development in brake systems for trucks and trailers, the automotive air brake. A quick, positive and safe air actuated brake, easily installed in field on any truck and trailer. Also Spencers new pole trailers, designed for the larger capacities of the new trucks.

In the machinery section a display of the new Kicchring mud jack for raising sunken concrete walks, pavements and slabs. Also Sterlings latest centrifugal water pumps and Ruemelius latest sand-blast equipment.

### A. LESCHEN & SONS ROPE CO.
**Booth 24, Texas Building.**

The A. Leschen & Sons Rope Co., St. Louis, Mo., is exhibiting in Booth 24 in the Texas Building with factory representative in charge assisting representatives of the Hinderliter Tool Co.

The exhibit features a large display of wire lines. Over 50 samples are shown, ranging in size from 9-64th-inch diameter



mandrel line to a 1⅛-inch diameter rotary line, and including various types and designs of round strand, flattened strand, preformed and non-rotating construction.

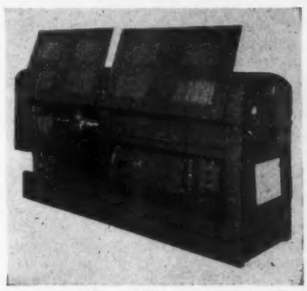
Another demonstration in this exhibit is the Leschen basic principle that it takes good materials to make good wire lines. In order to show one of the many rigid tests to which every wire is subjected before it is acceptable for the making of a Leschen line, this company is operating one of its torsion machines, which shows just how a wire is tested for twisting qualities. It is said that the testing laboratory of this company is one of its most important units as in it are machines and devices of various kinds for determining all wire qualities. There is also a machine for testing the breaking strength of completed wire ropes. The capacity of this machine is 800,000 pounds.

### LIBERTY MANUFACTURING CO.
**Jeanette, Pa.**
**Booth 111, Oklahoma Bldg.**

### THE LINCOLN ELECTRIC CO.
**Booths 67-68-69, Oklahoma Bldg.**

The Lincoln Electric Co., Cleveland, Ohio, is exhibiting in Booths 67, 68 and 69, Oklahoma Building, with representatives of the Big Three Welding & Equipment Co. in attendance.

The exhibit features new models of arc welding generators, welding electrodes and the first public demonstration of a



new automatic welding current regulating device.

Various models of "Shield Arc" welding machine will be displayed. Electrodes which will be demonstrated at the exhibit will include "Fleetweld" for oil pipe line welding work. Also "Hardweld" for welding high carbon steel; "Stainweld A" for use on 18-8 stainless steels; "Wearweld" for hard surfacing mild and high carbon steel; "Manganweld" for repairing or building up manganese steel parts. Also "Stable Arc," a nonsplashing electrode used on mild steel and "Ferro weld" shielded arc general purpose cast iron electrode.

A new device known as "Lincontrol." The operator taps the electrode on the work several times and the voltage is automatically raised. The operator can regulate the current accurately through this "Lincontrol" while working at some distance from the machine.

### LINCOLN ENGINEERING CO.
**St. Louis, Mo.**
**Booths 4 and 5, California Bldg.**

### THE LINDE AIR PRODUCTS CO.
**Booths 19, 20, 21, Texas Bldg.**

The Linde Air Products Co., 205 East

Forty-second Street, New York City, is exhibiting in Booths No. 19, 20, 21, Tex-

as Building with W. S. Winn, A. C. Johnson, and V. H. VanDiver in attendance.

The exhibit features a complete line of products for pipe line welding and cutting by the oxy-acetylene process. These include the latest developments in Oxweld welding and cutting equipment and supplies as well as Linde oxygen, Prest-O-Lite acetylene and Union carbide.

Of outstanding importance will be a demonstration of Lindewelding. This time and money-saving method of joining pipe has increased greatly in importance and efficiency since its introduction about three years ago. Recent improvements in Lindewelding apparatus and technique will be demonstrated. In the operating exhibit Lindewelding will be performed with the new multiple flame tip which has been establishing records for speed and soundness in pipe line welding throughout the southwest. The W-21 Lindewelder, a semi-automatic blowpipe for this application will also be shown.

Welds made by Lindewelding with the new multiple flame tip will be tested at the exhibit by means of an Oxweld portable tensile testing machine.

This exhibit will be of extreme importance to all branches of the petroleum industry. The outstanding saving to be gained with Lindewelding in refinery piping, booster stations and gasoline plant piping and in pipe line construction.

The new Oxweld MP-4 Pipe Line Acetylene Generator will be shown for the first time in the Southwest. Other important items will include the new Oxweld Type C-24 Cutting Blowpipe, the new Oxweld Type W-25 welding blowpipe and the new Oxweld Type W-29 blowpipe which is used for decoking in refinery operations.

### LUBRIKUP CO.
**Williamsport, Pa.**
**Booth 95, Oklahoma Bldg.**

### LUCEY PRODUCTS CORP.
**Tulsa, Okla.**
**Booths 36 and 37, Texas Bldg.**

### THE LUNKENHEIMER CO.
**Booths 130-131, Oklahoma Bldg.**

The Lunkenheimr Co., Waverly Avenue and Beekman Street, Cincinnati, Ohio, will occupy Booths 130 and 131 in the Oklahoma Building, with H. A. Burdorf, sales manager, Joe Waldeck, Marshall N. Stickel and Elmer R. Tieberman in attendance.

Exhibit will include the Lunkenheimer Co.'s new line of plug type "Renewo" and "Ferrenewo" valves. Plug

type valves for throttling, drain, drip, water column blow-down and other services demanding maximum resistance to wire drawing and other destructive action on valve seat bearings.

The seat and disc are made of "NS-5" alloy (patent applied for), a new and exclusive Lunkenheimer research development. "NS-5" is a nonferrous alloy of great hardness (300 Brinnell), it will not gall, is resistant to wear, abrasion, erosion and corrosion, and retains its hardness at high temperature.

The plug is deep-seated and ground to a full length, uniform bearing from end to end. Each disc is ground into its own seat with a fit as perfect as can be made to insure tightness and satisfactory service.

Plug type seats and discs are interchangeable with those in regular Lunkenheimer "Ferrenewo" and "Renewo" valves, making it possible to convert a regular valve into a plug type by simply changing the seat and disc. This feature reduces stock room inventory and maintenance expense.

Another new product on exhibit is the "Alvor" constant level oil control, a device for indicating and maintaining the proper oil level in ring-oiled bearings, and thereby minimizing the possibility of dry and overheated bearings.

The exhibit also includes a complete line of bronze, iron and steel valves, boiler mountings, lubricating devices and other specialties.

### LUFKIN FOUNDRY & MACHINE CO.
**Outside Space on Grounds.**

The Lufkin Foundry & Machine Co. Lufkin, Tex., is exhibiting on outside space on grounds with D. A. Reid, W. C. Trout, L. A. Little, W. W. Trout and C. B. Edwards in attendance.

The exhibit features a Lufkin No. 100 geared power driven by a 100-horsepower National Transit engine.

Also we will exhibit a single-reduction twin crank geared unit driven by a 30-horsepower engine.

We will show a Lufkin double reduction gear unit adaptable to either single crank or twin crank applications.

All units are equipped with Lufkin-Sykes Herringbone gears.

### LUFKIN RULE CO.
**Gates Hardware Co. Bldg.**
**Outside Space on Grounds**

### McCORD RADIATOR & MANUFACTURING CO.
**Booths 71-72, Oklahoma Bldg.**

The McCord Radiator & Manufacturing Co., Detroit, Mich., is exhibiting in Booths 71-72 in the Oklahoma Building, with W. Powers, J. Lisle and E. O. Bodkin in attendance.

The exhibit features new class SF mechanical liquid sight lubricator.

### McINTOSH & SEYMOUR CORP.
**Outside Space on Grounds**

The McIntosh & Seymour Corp., Auburn, N. Y., is exhibiting in outside space, with Theodore Gupton and H. Q. Hickman in attendance.

The exhibit features a 150-b.h.p. Diesel engine, connected through speed increasing gears to a centrifugal pipe line pump.

### McKEE, ARTHUR G., & CO.
**Booth 7, Scientific and Technical Bldg.**

The Arthur G. McKee & Co., 2422 Euclid Avenue, Cleveland, Ohio, is exhibiting in Booth 7 in the Scientific and Technical Building, with Paul Raigorodsky in attendance.

Arthur G. McKee & Co. will be represented only as associate of Petroleum Engineering, Inc., which will be the principal exhibitor in this booth. Besides the firm name, there will be on display enlarged photographic views of recent oil refinery installations by the oil refinery division.

### MacCLATCHIE MANUFACTURING CO.
**Booth 14, Continental Supply Co. Bldg.**

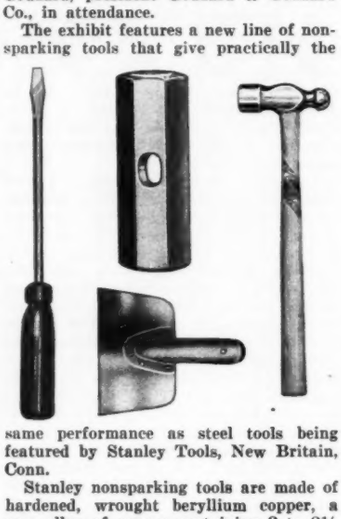
The MacClatchie Manufacturing Co., Compton, Calif., is exhibiting in Booth 14, Continental Supply Co. Building, with J. W. MacClatchie, president; C. F. Whaley, Mid-Continent representative; E. H. Foster and V. B. Gresham in attendance.

The exhibit features slush pump valve and pistons and other specialty items.

### MACHINE TOOL & SUPPLY CO.
**Booth 3, Arcade**

The Machine Tool & Supply Co., Tulsa, is exhibiting in Booth 3 in the Arcade Building, with Leo H. Gorton, president, J. H. Lee and J. E. Manchester, Machine Tool & Supply Co.; Fred Ziegler, Simons Saw & Steel Co.; W. F. Elkins, Cannedy Otto Manufacturing Co.; Alan C. Sweetser, Stanley Rule & Level Co., and A. N. Goddard, president Goddard & Goddard Co., in attendance.

The exhibit features a new line of nonsparking tools that give practically the



same performance as steel tools being featured by Stanley Tools, New Britain, Conn.

Stanley nonsparking tools are made of hardened, wrought beryllium copper, a new alloy of copper containing 2 to 2½ per cent beryllium.

It is the presence of the element beryllium that imparts to this alloy its remarkable durability. It can be formed and machined in a soft condition and then heat treated so that the tools have great tensile strength and are tough and hard.

There are 22 of these nonsparking, nonmagnetic Stanley tools. Included in the line are scrapers, hammers, sledges, screw drivers, pry bars, cold chisels and others.

### MAGNETO IGNITION CO., INC.
**Booth 19, Oklahoma Bldg.**

The Magneto Ignition Co., Inc., Tulsa, is exhibiting in Booth 19 in the Oklahoma Building, with R. E. Day and M. C. Elworthy in attendance.

The exhibit features the very latest types and models of Bosch, Wico, Scintilla, Splitdorf, K-W, Eisemann and Fairbanks-Morse magnetos. Also the Handy perfection oil bath air cleaner; Handy governors, oil filters; and Servo mechanical governors. Stitt spark plugs, as well as many other lines of gas engine type spark plugs; also Bendix brakes, Stromberg carburetors, Packard ignition cables and Willard storage batteries.

Will have a number of running exhibits showing the latest improvements in magnetos and other specialties.

### MAGNOLIA AIRCO GAS PRODUCTS
**Houston, Tex.**
**Booths 30, 31, 32, and 33, Oklahoma Bldg.**
With Air Reduction Sales Co.

### MALONEY TANK MANUFACTURING CO.
**Booth 14, Refiners and Marketers Bldg.**

The Maloney Tank Manufacturing Co., Tulsa, is exhibiting in Booth 14 in the Refiners and Marketers Building, with

J. S. Warren, R. A. Maloney, J. C. Highfill, and L. D. Hess in attendance.

The exhibit features both stairways and walkways made in interchangeable sectional units of 4 and 6 feet and can be used to meet all requirements in either single or double batteries of tanks. They may be attached to tanks of any height, are self-supporting, and require no ground supports.

These new pieces of equipment are made of Keystone copper steel, 12-gauge throughout, with nonskid tread, and with bolt holes punched on 2-inch centers. One-half inch bolts of 90,000-pound tensile strength are used throughout both constructions.

All walkways are of cantilever construction with three-quarters inch turnbuckle rods. They do not sag. These walkways have underneath supports welded every 2 feet.

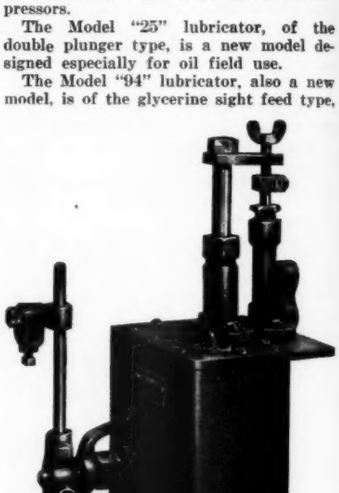
### MANZEL BROTHERS CO.
**Booth 103, Oklahoma Bldg.**

The Manzel Brothers Co., 315 Babcock Street, Buffalo, N. Y., is exhibiting in Booth 103 in the Oklahoma Building, with A. S. Isch, sales manager, and W. C. Jackson, oil field representative, in attendance.

The exhibit features working models of force feed lubricators for automatically lubricating engines, pumps and compressors.

The Model "25" lubricator, of the double plunger type, is a new model designed especially for oil field use.

The Model "94" lubricator, also a new model, is of the glycerine sight feed type,



a single plunger drawing the oil from the reservoir and forcing it through a liquid-filled sight glass direct to the point to be lubricated.

A feature of particular interest in this exhibit is a chemical feeder for handling treating compounds, a device recently placed on the market by this company. It is designed for automatically measuring and delivering just the right quantity of chemical into oil lines or tanks when treating oil.

### MARMON-HERRINGTON CO.
**On Grounds Opposite Main Entrance to Oklahoma Building**

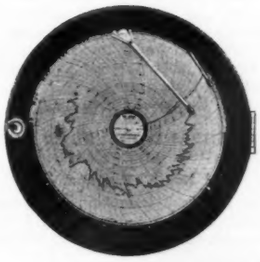
The Marmon-Herrington Co., Indianapolis, Ind., is exhibiting in open space opposite main entrance to the Oklahoma Building, with A. W. Herrington, president, and Bert Dingley, vice president, Indianapolis, Ind., in attendance.

The exhibit features three of the latest all-wheel-drive trucks manufactured by the company. All of the three models shown are especially adaptable for use in the oil industry. One is Model TH310A-4, a four-wheel-drive vehicle with a capacity of 6 tons. Another is Model A50-4, four-wheel-drive, with a capacity of 4 to 4½ tons. This vehicle is shown with special winch equipment. The third is the lightest model in the line—an A10-4, four-wheel-drive, with capacity of 1½ to 2 tons. The last named, which is equipped with a 1½-yard hydraulic dump body, is available for demonstration all during the exposition.

The Marmon-Herrington line recently

# Eliminate Costly Shutdowns with this New METER BODY

## Range Changing— *Easy, Quick, Inexpensive!*



Brown Circular Chart Recording Flow Meter with Automatic Recording Planimeter and Integrator.

See our exhibit at The International Petroleum Exposition, Tulsa, Okla., May 12-19, 1934. Booths No. 39 and 64.

It is often necessary for Oil Refineries to change the range of flow meters to meet different operating conditions. With the New Brown Electric Flow Meter Body such a change can be made quickly, easily and cheaply by simply substituting a new range tube of proper size in place of that originally furnished.

Six interchangeable range tubes permit changing the range without disturbing the orifice or shutting down the line. The New Brown Meter Body is easy to clean — it can be taken apart, cleaned and reassembled with a 10" wrench in less than an hour. It is never necessary to return a Brown Meter Body to the factory for recalibration. Highest accuracy is assured by the Inductance Bridge Principle of Operation. Offered in two types—one for working pressures up to 2,500 lbs., tested at 5,000 lbs. — the other for pressures up to 5,000 lbs., tested at 10,000 lbs.

Send for complete information about this remarkable New Brown Meter Body — write for Catalog 2002 describing many other advantages of Brown Electric Flow Meters.

THE BROWN INSTRUMENT COMPANY
4488 Wayne Avenue, Philadelphia, Pa.
*Branches in 22 principal cities*

# Brown Electric Flow Meter

*on the Inductance Bridge Principle*

was augmented by the addition of seven new models and now includes five series of all-wheel-drive trucks and truck-tractors with a total of 28 different models ranging in capacity from 1½ tons upward. Two of the new models are gasoline-powered units and five are equipped with Diesel engines.

Seventeen gasoline-powered Marmon-Herringtons now are available to the buyer. The two new models in this division are the TH340-4, a four-wheel-drive unit with a capacity of 20 tons, and the TH340-6, a six-wheel-drive vehicle with a capacity of 35 tons.

Introduction of the five new Diesel models brings this type of Marmon-Herrington to the 5 and 6-ton fields. Heretofore, the smallest Diesel-powered unit in the line was a 7-ton unit. There now are 11 Marmon-Herringtons with Diesel engines available to the buyer.

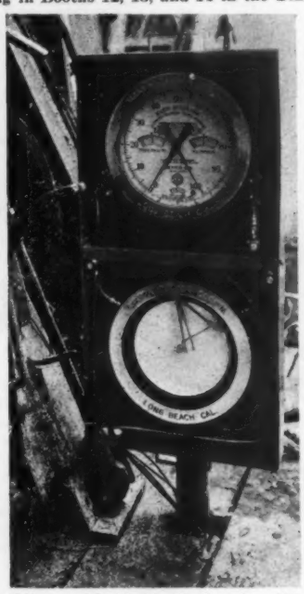
The new Diesel models are the THD310-4, four-wheel-drive, capacity 5 to 5½ tons; the THD310A-4, four-wheel-drive, capacity 6 tons; the THD340-4, four-wheel-drive, capacity 20 tons; the THD310A-6, six-wheel-drive, capacity 10 tons, and the THD340-6, six-wheel-drive, capacity 35 tons.

### MARTIN-DECKER CORP.

**Long Beach, Calif.**

**Booths 12, 13, and 14, Texas Bldg.**

The Martin-Decker Corp., 3431 Cherry Avenue, Long Beach, Calif., is exhibiting in Booths 12, 13, and 14 in the Texas



Building, with E. L. Decker in attendance.

The exhibit features working display of the Martin-Decker Quintuplex drilling control instrument. This instrument indicates and records every phase of the drilling operation, and includes a combination regulator and supersensitive weight indicator, mud pressure gauge, torque gauge and rotary table tachometer.

### MASON-NEILAN REGULATOR CO.

**Booths 61-62, Scientific and Technical Bldg.**

The Mason-Neilan Regulator Co., 1190 Adams Street, Boston, Mass., is exhibiting in Booths 61 and 62 in the Scientific and Technical Building, with Moorlane Co., Tulsa, and the Maintenance Engineering Corp., Houston, Tex., in attendance.

The exhibit features for the first time its new Series 2500 and Series 3500 junior pressure and temperature control instruments. These small size instruments are fully compensated and are considerably less expensive than the regular Mason-Neilan instruments.

The new Mason-Neilan over-range temperature safety device will also be shown for the first time. This unique engineering achievement safeguards temperature controlling and recording instruments against damage even though the controlled temperatures may greatly exceed the range of the instrument.

The new Mason-Neilan "Drift Compensator" will be on display in actual operation in conjunction with a Mason-Neilan Thermo-Pressure Compensated Temperature Controller.

The full line of Mason-Neilan Compensated pressure, temperature and pressure control instruments will be exhibited with several representative types in actual operation. These show clearly the advanced control valve compensator and other exclusive Mason-Neilan features.

The new liquid transmission flow meters and flow controllers will be seen for the first time in any exhibit. These advanced instruments operate on a radically new scientific principle which has entirely eliminated the necessity of the commonly used mercury pots. Furthermore, these flow instruments have many other unique improved features that overcome the shortcomings of other types of instruments.

In addition the Mason-Neilan line of ball bearing pressure regulators and liquid level controllers developed in and for the oil industry will be shown in cutaway models.

### MASSILLON-CLEVELAND-AKRON SIGN

**Massillon, Ohio**

**Booth 3, Refiners and Marketers Bldg.**
With Advertising Novelties Co.

### MASTER LOCK CO.

**Milwaukee, Wis.**

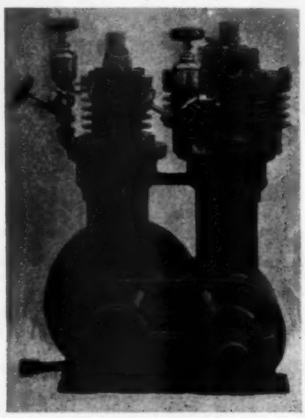
**Outside Space on Grounds**

### C. A. MATHEY MACHINE WORKS

**Outside Space on Grounds**

The C. A. Mathey Machine Works, Tulsa, is exhibiting on outside space on grounds with C. A. Mathey in attendance.

The exhibit features a gas test car with a miniature gasoline plant in the



back end, consisting of a gas test compressor and vacuum pump, scrubber, condenser, accumulator, transmission case with power takeoff, pulley housing, pulleys and belts.

This gas test compressor has a counterbalanced crankshaft with ball bearing, phosphorous bronze connecting rods, nonmetallic valves in the vacuum pump. Capacity of the compressor, 2½ cubic feet, 250 pounds pressure at 400 r.p.m.

Another novel display is a machine for raising and lowering torpedo shells in wells.

### MECHANICAL RUBBER CO.

**Booth 12, Continental Supply Co. Bldg.**

The Mechanical Rubber Co., Cleveland, Ohio, is exhibiting in Booth 12, Continental Supply Co. Building, with B. M. Howell, sales manager, Mid-Continent division; Joe Green, Oklahoma-Kansas representative, and A. M. Langley, Texas representative, in attendance.

The exhibit features samples of rubber belt, Super-Wilcox, Rough Rider and C. S. Co. raw edge rotary hose of Super-Wilcox and Rough Rider brands; high grade packing; and materials in crude form for manufacture of these products.

### MERCO NORDSTROM VALVE CO.

**Pittsburgh, Pa.**

**Booths 37 and 38, Scientific and Technical Bldg.**
With Pittsburgh Equitable Meter Co.

### MERRICK CORP.

**Booth 55, California Bldg.**

The Merrick Corp., Fort Worth, Tex., is exhibiting in Booth 55, California Building, with W. R. Law in attendance.

The exhibit features Merrick Bakelite drops and seats, disc cages, Saveite glass

Fully protected by Patent No. 1,844,780.

finish cages, washers, Saveite compressor rings, expander rings and discs and valves for all purposes. Also a complete line of Bakelite and Saveite stock in sheets of regular sizes. This is a noncorrosive material used in the oil industry in many places where corrosion of other material has been excessive.

### METALLIZING CO. OF AMERICA

**Block C on Grounds**

The Metallizing Co. of America, Inc., 1218 Long Beach Avenue, Los Angeles, Calif., is exhibiting in Block C on the grounds, with L. E. Kunkler, president, in attendance.

The exhibit features records of applications of Metallizing process in oil in-

dustry in preventing corrosion, resisting acid, building up shafts and pump plungers and other novel uses. The new improved model Metallizer which combines three separate guns into one model will be on exhibit in actual use.

### METALS COATING CO. OF AMERICA

**Booth 108, Oklahoma Bldg.**

The Metals Coating Co. of America, 495 North Third Street, Philadelphia, Pa., is exhibiting in Booth 108 in the Oklahoma Building, with A. H. Yoch and Mr. Llewellyn in attendance.

The exhibit features MetaLayeR, sprayed metal coating process, proved and accepted by nearly all industries for simultaneously melting, atomizing and impacting any of the commercial metals on any surface, regardless of size, shape or location. Coatings as applied are instantly cold, hard, dry, ready for use.

Exhibit demonstrates the application of sprayed molten metal coatings with MetaLayeR for providing protection against atmospheric and underground corrosion and chemical action; from deterioration due to exposure to high temperatures; for replacing mechanical wear; for increasing dimensions or

weight; for altering shapes and repairing surface defects; for developing unique decorative effects. The broad scope of its industrial uses appeal to construction and maintenance engineers.

### MID-CONTINENT CHEMICAL CO.

**Tulsa, Okla.**

**Block H, on Grounds**
With Independent Eastern Torpedo Co.

### MID-CONTINENT PUMP SUPPLY CO.

**Booth 8, California Bldg.**

Mid-Continent Pump Supply Co., 915 East Second Street, Tulsa, is exhibiting in Booth 8 in the California Building, with Ralph Van Matre, G. F. (Bill) Graham and "Milt" O'Haver in attendance.

The exhibit features Oil states pumps, shallow and deep well pumps, Pacific inserted liner pumps, chromium plated plungers, and Moloy XX liners.

### MID-CONTINENT SUPPLY CO.

**Booths 44-45, Oklahoma Bldg.**

The Mid-Continent Supply Co., Fort Worth, Tex., is exhibiting in Booths 44 and 45 in the Oklahoma Building, with F. J. Johns in attendance.

The exhibit features an 85-horsepower Cummins Diesel six-cylinder engine and an 83-horsepower Cummins Diesel four-cylinder automotive engine, both in operation.

The Cummins Diesel engine is built for every power requirement and is an innovation in simplicity of operation, dependability, flexibility and economy.

A novel feature of this exhibit is that the engines shown were hauled to the Exposition from the factory trucks powered with Cummins-Diesel engines.

### MIDLAND CHAMBER OF COMMERCE

**Booth 13, Arcade**

The Midland Chamber of Commerce, Midland, Tex., is exhibiting in Booth 13 in the Arcade, with Paul T. Vickers in attendance.

The exhibit features a map 7½ by 6 feet painted on a window shade which will be the main feature of the Midland Chamber of Commerce exhibit. This map will show every field in the Permian Basin of West Texas and New Mexico; the pipe lines and the city of Midland, as headquarters for the area. Reproduction of the map will be given away at the Exposition. Pictures and other literature exploiting Midland as the "City with more large company headquarters than all other Permian Basin towns combined" will compose the exhibit.

### MIDWEST EQUITABLE METER CO.

**Tulsa, Okla.**

**Space Outside and in Booths 37 and 38. Scientific and Technical Bldg.**

### MIDWEST PIPING & SUPPLY CO.

**Booths 117-118, Texas Bldg.**

The Midwest Piping & Supply Co., Inc., 1450 South Second Street, St. Louis,

# MISTAKE

## IN TESTING PROVES HIGH QUALITY OF SHIELDED ARC WELDING

"Look here, Lad—these shielded arc welds withstood 5 times normal testing pressure."
"Sure, Pop—and it costs less to weld with a shielded arc."

Upon completion of an order for 102 shielded arc welded tanks, the fabricator was ordered to test them at 25 lbs. pressure. The tester thought he was told to test at 125 lbs. pressure . . . the above photograph shows the result of the big mistake. Each head of the tank bulged outward 6 inches, creasing the shielded arc weld as shown . . . but no leaks or fractures occured.

Again an actual test definitely proves the greater strength and greater ductility of welds made with "Shield-Arc" welders and "Fleetweld" electrodes. Not only does this Lincoln equipment produce welds of 65,000 to 75,000 lbs. per sq. in. tensile strength with ductility equal to mild steel, but the welds also have greater resistance to fatigue, impact and corrosion.

You pay no more for these higher quality welds . . . in fact, they actually cost less than ordinary welds because with Lincoln equipment you weld much faster. Before you buy any welding equipment find out how much Lincoln can save you.

LINCOLN

NEW IN WELDING
"Lincontrol"
—remote control without extra cables or portable accessories. Write for bulletin.

W-69

THE LINCOLN ELECTRIC COMPANY, *Largest Manufacturers of Arc Welding Equipment in the World*, CLEVELAND, OHIO

"SHIELD-ARC" WELDERS AND ELECTRODES

# We're looking forward to meeting you at BRISTOL'S BOOTHS

INTERNATIONAL PETROLEUM EXPOSITION TULSA, OKLA., MAY 12-19, 1934

We are looking forward to meeting you and our many other friends at the International Petroleum Exposition in Tulsa.

It will be a pleasure to greet you. Also to show you the splendid line of instruments and instrument control which Bristol's has pioneered and perfected for the Petroleum Industry.

When you stop at our Booths Nos. 1 and 2, we believe you will be interested in seeing Bristol's latest Electrically and Air Operated Automatic Temperature Control, that can hold processing temperatures within fractional degree fluctuations; that makes possible uniform throughput every day; protects the quality and reputation of your products; and promotes economy.

Come and see how extremely sensitive, yet how rugged and practical, Bristol's Temperature Control is. Also examine carefully Bristol's Recording Thermometers and Gauges. Look over the complete line. See for yourself how Bristol's leads in fine petroleum instrument equipment.

Our Booths are Nos. 1 and 2 in the Scientific and Technical Building. Be sure to come. We'll be looking for you.

THE BRISTOL COMPANY — WATERBURY — CONNECTICUT

*Branch Offices: Akron, Birmingham, Boston, Chicago, Detroit, Los Angeles, New York, Philadelphia, Pittsburgh, St. Louis, San Francisco*

TRADE MARK
BRISTOL'S
REG. U. S. PAT. OFF.

PIONEERS IN PROCESS CONTROL SINCE 1889

Mo., is exhibiting in Booths 117 and 118 in the Texas Building, with J. McC. Moffett, F. C. Fantz and C. S. Simon in attendance.

The exhibit features Midwest welding ells in size from three-quarters to 20 inches. Among the distinctive features of this line are the long tangent that facilitates installation, and final working of metal is in compression at a forging heat which assures dimensional accuracy and improved structure of metal. These ells are carried in stock made from wrought steel and Reading puddled iron; on special order they are made from any standard alloy.

The exhibit will also include the other Midwest welding fittings: Heads, saddles, sleeves, Van Stone nipples, reducers, shaped nipples and slip-on and butt flanges. A number of interesting pipe welding applications will also be shown.

### MILLER SAND PUMP CO.
**Outside Space on Grounds.**

The Miller Sand Pump Co., Sapulpa, Okla., is exhibiting in outside space on grounds with J. Ed. Ragan and S. John Smith in attendance.

The exhibit features the improved Miller sand pumps, Jiffy pipe clamps, and Chancellor gas anchors. The improved Miller sand pump with the new style rope socket neck bail and with the tool pin bails are featured, there being one of each cut open so that the construction may be seen.

### MINE SAFETY APPLIANCE CO.
**Booth 56, Oklahoma Bldg.**

The Mine Safety Appliance Co., Pittsburgh, Pa., is exhibiting in Booth 56 in the Oklahoma Building, with H. W. Richards, Tulsa; George J. Gruber, Houston, Tex.; F. H. Cushing, El Paso, Tex.; L. J. Bowker and J. B. Davies, Pittsburgh, Pa., in attendance.

The exhibit features a complete line of safety, rescue and first aid equipment, featuring the Burrell All-Service mask, special tank gaugers' masks, hose masks, both hand power and motor driven. Special masks for H2S protection. The MSA combustile gas indicator for determining percentages of explosive gas in tanks or other enclosed places. Skullguards of different types for head protection.

MSA petroleum safety shoes, Edison cap and hand lamps for individual illumination.

HH inhalators for aiding in resuscitation.

McCaa oxygen breathing apparatus.

First aid kits and refills, safety belts, goggles, special protective clothing for protection of workmen, respirators, both paint and dust, danger and directional signs, gas indicators and detectors.

Safety Day, May 18, will be observed.

### MISSION MANUFACTURING CO.
**Booths 119 and 120, Texas Bldg.**

The Mission Manufacturing Co., 2416 Railroad Street, Houston, Tex., is exhibiting in Booths 119 and 120 in the Texas Building, with J. H. Tucker, W. B. Sharp, Donald Garrison, W. T. Campbell, H. F. Dean, and A. O. Nelson in attendance.

The exhibit features Mission rotary slips, valves; the Mission-Haywood siphon lift and Mission pistons, all improved type equipment used in drilling and producing oil wells.

### MODERN ENGINEERING CO.
**Booths 93 and 94, Texas Bldg.**

The Modern Engineering Co., 3411-13 Pine Boulevard, St. Louis, Mo., is exhibiting in Booths 93 and 94 in the Texas Building, with Irw. F. Fausek, A. J. Fausek, John J. Keane, Harold Hicks, and Howard Guthrie in attendance.

The exhibit features the MECO multiseat regulator with the check valve in the nozzle in operation. First time that we know of that regulator operations were shown in this elaborate fashion.

Exhibition of the new improved MECO complete line of equipment.

### MOORE, LEE C., & CO.
**Booths 65 and 66, Oklahoma Bldg.**

The Lee C. Moore & Co., Tulsa, is exhibiting in Booths 65 and 66 in the Oklahoma Building, with E. S. Anderson, O. H. Dittmer and C. R. Krause in attendance.

The exhibit features Lee C. Moore steel derricks, and a complete line of pumping equipment.

### MOORLANE CO., THE
**Booths 59, 60, 61, 62 and 63, Oklahoma Bldg.**

The Moorlane Co., Tulsa, is exhibiting in Booths 59, 60, 61, 62, and 63 in the Oklahoma Building, with W. D. Moorer, Egon Kohler, William Frederick, W. A. Hagenbaumer and S. D. Hunt in attendance.

The exhibit features equipment and apparatus manufactured by companies the Moorlane Co. represents, including Henry Vogt Machine Co., Mason-Neilan Regulator Co., Schutte & Koering Co., De Laval Steam Turbine Co., Harnischfeger Corp., Scovill Manufacturing Co., Bastian-Blessing Co., Globe Steel Tubes Co., and Vapor Recovery Systems Co.

### MORRISON BROTHERS CO.
**Dubuque, Iowa**
**Booth 48, Refiners and Marketers Bldg.**

### MOTOR IMPROVEMENTS, INC.
**Newark, N. J.**
**Booth 17, Oklahoma Bldg.**

### MULTI METAL WIRE CLOTH CO.
**New York City, N. Y.**
**Booths 15 and 16, Refiners and Marketers Bldg.**

### MUSKOGEE IRON WORKS
**Outside on Grounds**

The Muskogee Iron Works, Muskogee, Okla., is exhibiting in outside space on grounds, with Pat Lewis and Claude Grant in attendance.

The exhibit features a complete line of skid type hoists for wells of all depths, also a full line of pipe line booms and supplies.

Also a new sucker rod hanger marketed under the trade name "Paramount."

### NATIONAL CARBIDE SALES CORP.
**New York City, N. Y.**
**Booth 30, Oklahoma Bldg.**
With Air Reduction Sales Co.

### NATIONAL EQUIPMENT CORP.
**Block C, on grounds**

The National Equipment Corp., Milwaukee, Wis., is exhibiting in Block C on grounds with A. E. Holcomb and Carl Wagner in attendance.

The exhibit features an entirely new product known as the mud jack. The function of this machine is to raise concrete slabs that have sunken and it is accomplished by drilling holes in the concrete and pumping mud under the concrete to raise it to the proper level. This unit is of particular interest to companies operating filling stations where this trouble may occur.

### NATIONAL SUPPLY CO
**Booths 83-84-85-126-127-128, Texas Bldg.**

The National Supply Co., Toledo, Ohio, is exhibiting in Booths 83, 84, 85, 126, 127 and 128, Texas Building, with J. M. Wilson, J. A. Geisman, D. S. Faulkner, M. T. Archer, C. C. Cartwright, I. G. Weatherill, O. T. Dawson, L. V. Boggs and H. G. Trimble in attendance.

No equipment or machinery will be displayed in this space but plenty of comfortable chairs are provided, with a good supply of drinking water, and literature of some of the National Supply Co.'s products available for distribution.

### NATIONAL TANK CO.
**Booths 97-98-113-114 Texas Building.**

The National Tank Co., Tulsa, Okla., is exhibiting in Booths 97-98-113 and 114 Texas Building with Jay P. Walker, C. G. Wells, Guy O. Marchant and J. E. Richard in attendance.

The exhibit features working models of oil and gas separators. One model will be made of glass so that all internal baffles may be seen, and the path of the oil and gas observed as it passes through the separator.

Another model will show the National dual control separator in operation. A full-size 1,000-pound working pressure separator will be installed with all valves and fittings in place; also a full-size dual control separator.

A model battery of bolted steel tanks, complete with walkway and piping, hooked up to a model separator will also be on display.

The National "Tite-line" coupling, something new and just being introduced to the trade will be exhibited.

### NATIONAL TRANSIT PUMP & MACHINE CO.
**Outside Space on Grounds**

The National Transit Pump & Machine Co., Oil City, Pa., is exhibiting in Outside Space on Grounds, with C. H. Forster, vice president; N. A. Newton, regional sales manager; J. M. Sharp, chief engineer; B. M. Staley, rotary pump superintendent; R. P. Lay, gas engine designing, and Gray I. Morris, district manager, Houston, Tex., in attendance.

The exhibit features three of the latest type multicylinder gas engines connected to two of the largest type Lufkin oil country powers. These units will be in operation, showing conditions exactly as they exist in the oil fields.

In addition several pumps will be shown illustrating the latest design of improved pumping equipment for handling hot oil in the refineries, and rotary pumps.

### NATIONAL TUBE CO.
**Booths 24-25-26-27-28-29, Oklahoma Bldg.**

The National Tube Co., Pittsburgh, Pa., is exhibiting in Booths 24, 25, 26, 27, 28 and 29 in the Oklahoma Building, with F. R. Braman, J. M. Denny, J. B. Graham, F. A. Marsh, W. L. Schaeffer, E. N. Smith, A. C. Remmel, E. L. Wycoff and F. O. Young in attendance.

The exhibit features a complete line of oil country tubular products including casing, drill pipe, tubing, line pipe and large outside diameter pipe.

### NELSON ELECTRIC SUPPLY CO.
**Booths 32-33, California Bldg.**

The Nelson Electric Supply Co., Tulsa, Okla., is exhibiting in Booths 32-33 in the California Building with W. L. Muir in attendance.

The exhibit features Anaconda Wire & Cable Co. wire, Weston Electrical instruments, Square-D switches, Daniel Woodhead Co. hand lamps, Harris Brothers searchlights, Bryant Electric Co. wiring devices, Sangamo Electric Co. meters and switches and Burgess Battery Co. batteries and flashlights.

Also a number of other items that will be of interest to the electrical and engineering departments of the oil companies.

### NEW BEDFORD CORDAGE CO.
**Booth 15, Continental Supply Co. Bldg.**

The New Bedford Cordage Co., New Bedford, Mass., is exhibiting in Booth 15, Continental Supply Co. Building, with W. W. Totten, vice president and Harry Davis, general representative in attendance.

The exhibit features samples of cat lines, spinning lines, bull rope, manila drilling cables; lengths of natural manila fibers in heads.

### NEW ORLEANS CORRUGATED BOX CO.
**New Orleans, La.**
**Booth 50, Refiners and Marketers Bldg.**

### NICHOLSON FILE CO.
**Providence, R. I.**
**Outside Space on Grounds**

### NORMA-HOFFMANN BEARINGS CORP.
**Booth 8, Texas Bldg.**

Norma-Hoffmann Bearings Corp., Stamford, Conn., is exhibiting in Booth 8 in the Texas Building, with D. W. Robinson, D. Christopher and C. H. Wallace in attendance.

The exhibit features a complete range of types and sizes of ball, roller and thrust bearings and also samples of various types of pillow blocks and mountings.

### W. C. NORRIS, MANUFACTURER
**Booth 8, Arcade Bldg., and Block D on Grounds.**

W. C. Norris, Manufacturer, Tulsa, Okla., is exhibiting in Booth No. 8 in the Arcade Building and Block D with Joe H. Eustice, Wm. R. Barney and others of W. C. Norris, Manufacturer, sales force in attendance.

The exhibit features on Lot D, opposite booth, items of advanced design in heavy, "Back Side power takeoff," equipment, as well as new types of pump jacks, rod line swings and hold downs, for use in connecting wells to a centrally-located power.

In the booth, the smaller items of W. C. Norris' quality pumping equipment are exhibited, featuring among other interesting items, the W. C. Norris Blue Ribbon working barrel.

### NORTH AMERICAN CAR CORP.
**Booth 2, Refiners and Marketers Bldg.**

The North American Car Corp., 915 World Bldg., Tulsa, Okla., is exhibiting in Booth No. 2 in the Refiners and Marketers Building with G. M. Brigham, R. W. Patterson, R. J. Bruffy, Gus Schott and J. C. Scheidel in attendance.

### OAKITE PRODUCTS, INC.
**Booths 61-62, Texas Bldg.**

The Oakite Products, Inc., 22 Thames Street, New York City, is exhibiting in Booths 61 and 62, in the Texas Building, with J. A. Carter, J. C. Leonard and R. M. Browning in attendance.

The exhibit features different materials designed for cleaning, paint stripping and other related operations together with a visual demonstration of methods for cleaning tank cars, heat exchangers and other producing and refinery equipment. Technical information, blue prints, drawings and other information will be available.

### WALTER O'BANNON CO.
**Booth 104, Texas Bldg.**

The Walter O'Bannon Co., 400 South Rockford, Tulsa, Okla., is exhibiting in Booth No. 104 in the Texas Building with E. L. Hager, B. M. Caldwell, L. B. Rowsey, C. B. Parrish, R. E. Kenngott and C. W. Henry in attendance.

The exhibit features the new O'Bannon automatic tubing spider of split design, and can be taken off or put on tubing as readily as a tubing elevator.

### OHIO STEEL FOUNDRY CO.
**Booth 76, Texas Building.**

The Ohio Steel Foundry Co., Springfield, Ohio, is exhibiting in Booth No. 76 in the Texas Building with W. J. Hayes, sales manager, and B. W. Vinson in attendance.

The exhibit features Type A-5 Frictionless return bends for cracking stills. This fitting is an improvement over earlier types of sectional or full streamline return bends.

Our exhibit also includes return bends of box type with both mule ear and the special Ohiolock top, also box type streamline return bend.

Various alloy steels to meet special conditions are used in the different parts of the fittings displayed.

Fahrite heat resistant alloy tube hangers and support beams. Typical designs of tube hangers and supports being furnished to the leading refiners are also being displayed. Those parts are made in all sizes of special alloy well suited for the conditions, this alloy being identified by our trade name Fahrite N-3.

XUM

### THE OIL CONSERVATION ENGINEERING CO.

**Booths 82 and 129, Oklahoma Bldg.**

The Oil Conservation Engineering Co., 877 Addison Road, Cleveland, Ohio, is exhibiting in Booths No. 82 and 129 in the Oklahoma Building with H. H. Fleming, W. H. McGunagle, H. W. James, Arthur Dooley and George T. Bloom in attendance.

The exhibit features two new items in addition to the regular line of Oceco tank fittings. One of the new items is the Oceco positive displacement liquid meter. The outstanding feature of this item is the fact that it is calibrated in the shop once for all. It will then have the same accuracy handling heavy or light oils against maximum or minimum heads.

The second new item is the Oceco turborotor pump. The chief feature of this pump which has a smooth turbine-like action is the suspended or floating construction of all the internal mechanism.

### OIL COUNTRY SPECIALTY MANUFACTURING CO.

**Coffeyville, Kans.**

**Booths 9 and 10, Oklahoma Bldg., and Outside Space on Grounds**

### OIL ENGINEERING CO.

**Booth 96, Texas Bldg.**

The Oil Engineering Co., 811 Wright Building, Tulsa, is exhibiting in Booth 96 in the Texas Building, with Gustav Staub and D. E. McPherson in attendance.

The exhibit features treating of oil emulsions, oil reclaiming from crude oil tank bottoms, and refinery and natural gasoline plant construction.

### THE OIL WELL IMPROVEMENTS CO.

**Booths 95-116, Texas Bldg.**

The Oil Well Improvements Co., Tulsa, is exhibiting in Booths 96 and 116 in the Texas Building, with Alf. G. Heggem, Ed Ligon, Frank Wood, W. T. Timmons, A. J. Brown and Paul Henrichs in attendance.

The exhibit features the Oil Well Improvements Co.'s improved line of control heads, roller oil savers, casing heads and the new Apex and Nolos stuffing boxes for polished rods.

The feature of the exhibit is the new Heggem rotary gate valve, designed to meet modern conditions of high pressures, high temperatures and corrosive fluids. The valve is similar in appearance to the better class of standard valves, and is interchangeable with many of them without disturbing pipe lines. The valve consists of a rotary core mounted on a journal within the valve body, and carrying a valve plate which is mounted on a lever, one end of which is fulcrumed in the valve core, and the other is connected to an eccentric which is carried on the valve stem.

The Heggem rotary gate valve does not require any lubricant to perfect a seal. The valve is manufactured in sizes from 3 inches up to and including 36 inches, to operate easily under working pressures from 125 to 5,000 pounds.

### OIL WELL SUPPLY CO.

**Booths 96-113-114-115, Oklahoma Bldg.**

The Oil Well Supply Co., Oil City, Pa., is exhibiting in Booths 96, 113, 114 and 115 in the Oklahoma Building with E. E. Robbins, sales manager; I. W. Alcorn and J. S. Fuller, sales engineers; Byron Post, city salesman; R. R. LaFollette and J. T. Glass, salesmen and L. S. Travers, store manager, Tulsa, in attendance.

This exhibit will feature products of the U. S. Steel Corp. and especially material manufactured by the Illinois Steel Corp., occupying an adjoining booth. Latest development in small equipment, polished rods, stuffing boxes, pumps of the insert and plunger type, sucker rods and similar equipment.

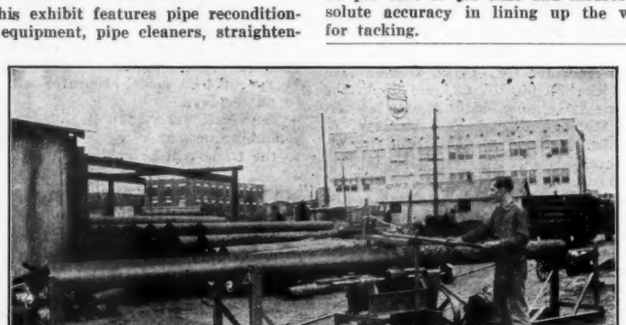
A supply of all literature pertaining to Oil Well Supply Co. products will be available at the booth with men competent to discuss and explain their uses on hand at all times.

### O. K. MACHINE & MANUFACTURING CO., INC.

**Space Outside on Grounds**

The O. K. Machine & Manufacturing Co., Inc., Tulsa, is exhibiting in space on grounds outside of buildings with G. T. Lownsbery, Carl Steiger and Granville Strobel in attendance.

This exhibit features pipe reconditioning equipment, pipe cleaners, straighteners and dent removers. The pipe cleaner will handle pipe efficiently from 2 to 12 inches in diameter and clean a 20-foot joint to the metal in from one to three minutes. Two inexperienced men necessary to operate. Machine is 3½ feet by 22 feet and weighs about 1,150 pounds uncrated.



Pipe dent remover is for 5⅜ to 16-inch pipe. It is 12 feet long and weighs about 90 pounds uncrated. It will remove dents and flat spots from all pipe for which it is adapted.

### OKLAHOMA MOTOR CO.

**Block J.**

The Oklahoma Motor Co., 1201 South Boston, Avenue, Tulsa, Okla. is exhibiting in Block J on grounds with Charles Lukins and G. Y. Parrish in attendance.

The Fargo Motor Corp., which is the division of Chrysler Motor, handling national buyers, has leased the Chicago Pneumatic Tool Co. Building on Block J, on the Exposition grounds. We, as exclusive De Soto dealers and one of the three Plymouth dealers in Tulsa, are co-operating with the Fargo Motor Corp. in all matters pertaining to the Exposition. We will display two models of Airflow De Soto automobiles, and various models of Plymouths.

### OKLAHOMA RIG & SUPPLY CO.

**Booth 33, Texas Bldg.**

The Oklahoma Rig & Supply Co., 519 Metropolitan Building, Muskogee, Okla., is exhibiting in Booth No. 33 in the Texas Building with S. D. Slaughter in attendance.

The exhibit features a complete line of hickory tool handles, from the log to the finished handle. Gas measuring poles, gauge poles and filler cants for steel wheels.

### OKLAHOMA STEEL CASTING CO.

**Booths 47-48, Texas Bldg.**

The Oklahoma Steel Castings Co., Tulsa, is exhibiting in Booths 47 and 48, in the Texas Building, with Sidney J. Moore and Ernest M. Newland in attendance.

The exhibit features machined and rough steel castings.

### OSBORN MANUFACTURING CO.

**Cleveland, Ohio**

**Booths 29 and 30, Texas Bldg.**

### OSTER WILLIAMS CO.

**Booths 1-2, Arcade.**

The Oster-Williams Co., 2057 Sixty-first Place, Cleveland, Ohio, is exhibiting in Booths 1 and 2 in the Arcade with H. C. Gardner, H. A. Maurer and A. S. Gould in attendance.

The exhibit features in addition to our Rapiduction and Tom Thumb pipe machines and hand-operated stocks and dies which have been well known in the oil industry for a number of years, a new pipe welding assembly table which revolutionizes the method of preparing pipe for the welding operation. It eliminates the make-shift methods now used, saves 90 per cent of the time and insures absolute accuracy in lining up the work for tacking.

### PACKARD ELECTRIC CO.

**Warren, Ohio**

**Booth 19, Oklahoma Bldg.**

With Magneto Ignition Corp.

### PALM BROTHERS DECALCOMANIA CO.

**Chicago, Ill.**

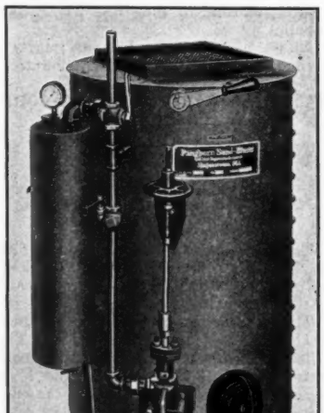
**Booth 5, Refiners and Marketers Bldg.**

With Advertising Novelties Co.

### PANGBORN CORP.

**Booths 29 and 30, Texas Bldg.**

The Pangborn Corp., Hagerstown, Md., is exhibiting in Booths 29 and 30 in the Texas Building, with J. B. Corby in attendance.




The exhibit features Type "AV-3" direct pressure blast cleaning machine, for cleaning of pipe lines, pipe fittings, and tanks.

### PARAMOUNT ROD HANGER

**Tulsa, Okla.**

**Outside Space on Grounds**

### PARKER APPLIANCE CO.

**Booths 57 and 46, Scientific and Technical Bldg.**

The Parker Appliance Co., 10320 Berea Road, Cleveland, Ohio, is exhibiting in Booths 57 and 46 in the Scientific and Technical Building, with A. L. Parker and C. E. Klamm in attendance.

The exhibit features a complete line of tube couplings, valves and fittings of the flared type in carbon steel, stainless steel, monel metal, and aluminum alloys —also, bronze fittings of the soldered and brazed types. A complete line of tube bending and fabricating tools and tube assemblies as fabricated with equipment on display.

The Parker line is used extensively in power plants, air compressors, machine tools and wherever small piping is to be installed. The line ranges in tube sizes from one-eighth inch O.D. to 2 inches O.D. in the flared type, and to 6 inches O.D. in the brazed or soldered type. Parker products are used extensively in the oil industry for instruments, oil, water, gas and air piping wherever such piping is required.

### PARKERSBURG RIG & REEL CO.

**Booth 87, Texas Bldg.**

The Parkersburg Rig & Reel Co., Parkersburg, W. Va., is exhibiting in Booth 87 in the Texas Building, with P. L. Brooks, sales manager; K. R. Teis, sales engineer; A. M. Bowman, Tulsa district manager, and E. L. Byer, salesman, in attendance.

The exhibit features the Parkersburg Hydromatic brake which is radically different in principle from any brake previously used in the oil field. It employs fluid friction for its resistance instead of the mechanical or dry friction, relied upon by oil field brakes since 1859.

Complete and exhaustive tests in shop and field have demonstrated that, regardless of depth of well, the Hydromatic brake justifies its general use by the safety and smoothness of its operation.

It is more than a brake—it is a governor that automatically controls the speed of the descending load, making it impossible for the hoist to "run away." It absorbs and dissipates energy and heat without wear, eliminating cracked and scored drums and frequent lining replacements on the regular friction brake used to bring the load to rest.

The Hydromatic brake is self-contained, has only one "moving part," is easily installed. It is only 39 inches in diameter and occupies but 16 inches of shaft space, yet develops the enormous capacity of 3,130 horsepower at 540 r.p.m.

### PEERLESS SUPPLY CO.

**Booth 75, Texas Bldg.**

The Peerless Supply Co., 122 North Lansing Avenue, Tulsa, is exhibiting in Booth 75 in the Texas Building, with H. W. McKissick and C. B. Johnson in attendance.

The exhibit features the McKissick heavy-duty steel snatch block for use on all kinds of heavy trucking, tractor and rotary work. The Peerless stuffing box of the floating type assuring maximum wearing of the rings. McKissick tubing bleeder and standing valve and McKissick safety blocks.

### PENNSYLVANIA GRADE CRUDE OIL ASSOCIATION

**Booth 1, California Bldg.**

The Pennsylvania Grade Crude Oil Association, 501 Oil City National Bank Building, Oil City, Pa., is exhibiting in Booth 1 in the California Building, with J. E. Moorhead in attendance.

The exhibit features the progress made in the Pennsylvania Grade area in the past 75 years. A replica of the original Drake well will be shown; exhibits describing the research program of the association at State College, Pa., should attract special attention, particularly of producers who are interested in gas-air or water energy; sample sands and microphotographic enlargements of typical sands; photographs, maps, and literature, dealing with various phases of the Pennsylvania Field.

The booth also is headquarters for the Diamond Jubilee of Oil Committee which

# WHEN YOU VISIT THE OIL SHOW

- **Meet your friends at The Oil and Gas Journal's booth in the center of the Exposition grounds.**

- **The Journal's booth, shown in the circle in the accompanying picture, is the hub of the display and exhibits.**

- **The booth will have telephone and telegraph facilities, a radio, a library of books of interest to oil men, easy chairs and accommodations to make your visit pleasant and comfortable.**

- **We are anxious to do everything in our power to make your visit to the International Petroleum Exposition profitable and pleasant. Make our booth your headquarters and the meeting place to greet your friends.**

# THE OIL AND GAS JOURNAL

is preparing an observance of the seventy-fifth anniversary of the discovery of oil by Colonel Drake. This celebration will be held at Titusville, Pa., in August, 1934.

### PENNSYLVANIA TRANSFORMER CO.

**Block G on Grounds**

The Pennsylvania Transformer Co., Pittsburgh, Pa., is exhibiting in Block G on grounds, with Max E. Landry, Oklahoma City, Okla., in attendance.

The exhibit features a transformer and transformer coil bushing and several specimens.

### PETROLEUM ELECTRIC POWER CLUB

**Booth 78, Oklahoma Bldg.**

The Petroleum Electric Power Club, P. O. Box 1498, Oklahoma City, Okla., is exhibiting in Booth 78 in the Oklahoma Building, with W. S. Baugh, Kansas Gas & Electric Co., Wichita, Kans.; D. M. McCargar, Allis-Chalmers Manufacturing Co., Tulsa; W. H. Stueve, Oklahoma Gas & Electric Co., Oklahoma City, Okla.; Mr. Robinson, Public Service Co. of Oklahoma, Tulsa; O. A. Jennings, Oklahoma Gas & Electric Co., Oklahoma City, Okla.; F. A. Graham, Kansas City Power & Light Co., Kansas City, Mo., in attendance.

The exhibit consists of background painting of typical steam generating plant, showing transmission lines and adjacent oil fields. Directly in front of the background is a working model of a beam pump well with motor, gear reduction, and beam pumping equipment actually in operation; also, directly in front of the background can be seen a model (hand carved) of a "Rannett" pipe line pumping unit, which is an exact replica of the 13 units recently installed for the Great Lakes Pipe Line Co.

A constant speed multi-rated horsepower oil field motor, offered by the General Electric Co., the type of motor being most considered for use in the East Texas oil fields for beam pumping. Also a totally enclosed oil field motor offered by the Westinghouse Electric & Manufacturing Co., the type of motor being most considered for outdoor use in gasoline plants and refineries. A cut-away motor model, product of the Allis-Chalmers company, will be shown to indicate the interior windings of both the stator and rotor.

Will distribute a directory of the Power Club representatives, giving their company names and addresses for all power companies from the Gulf through the Mid-Continent oil field to the Great Lakes. Competent power sales engineers will be in attendance at all times to meet oil company executives and engineers who may be interested in electrical problems and, if possible, to answer questions regarding our service facilities and rate schedules.

### PETROLEUM ENGINEERING, INC.

**Booth 7, Scientific and Technical Bldg.**

The Petroleum Engineering, Inc., 616 Philtower Building, Tulsa, is exhibiting in Booth 7 in the Scientific and Technical Building, with Paul Raigorodsky, vice president; F. Van Acker, chief engineer; Norman K. Rector, design engineer; and W. A. Stover, chief draughtsman, in attendance.

The exhibit features photographs of recent plant installations, from complete refineries and cracking units, to the latest in natural gasoline recovery.

Special types of bubble trays and caps.

A glass working model of a gasoline absorber, permitting observation of the operation of bubble trays of three different types.

### PHILLIPS PETROLEUM CO.

**Booth 40, Refiners and Marketers Bldg.**

The Phillips Petroleum Co., Bartlesville, Okla., is exhibiting in Booth 40 in the Refiners and Marketers Building, with Walter B. Vincent and Ralph Boon in attendance.

The exhibit features a background showing exact model of one of the company's service stations located in Tulsa. Merchandising 66 motor, 66 grease, 66 naphtha, 66 spot remover, 44 insecticide, and a full line of our "66" accessories, and all products.

Also, a display of Lee Tires. Our company is sole distributor for the states in which we operate.

### PITTSBURGH EQUITABLE METER CO.
### MERCO NORDSTROM VALVE CO.

**Booths 37 and 38, Scientific and Technical Bldg.**

The Pittsburgh Equitable Meter Co., and Merco Nordstrom Valve Co., 400 North Lexington Avenue, Pittsburgh, Pa., are exhibiting in Booths 37 and 38 in the Scientific and Technical Building, with A. J. Kerr, district manager; W. J. McArt, J. H. Baker, C. K. Madison, and M. D. Gilbert in attendance.

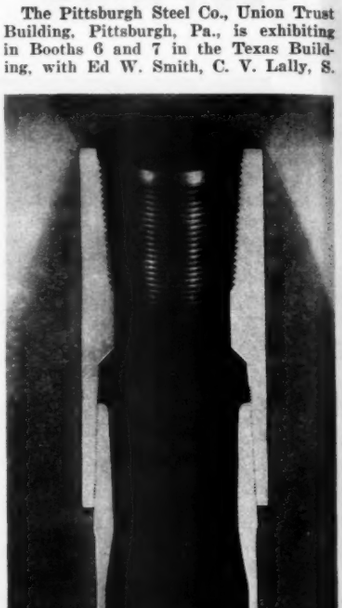
The exhibit features for Pittsburgh Equitable Meter Co. a complete line of its well known meters, regulators and accessories for the measurement and control of oil and gas. Models displayed will include the Eureka oil meter for pipe line service; Pittsburgh high pressure refinery meters, and Pittsburgh positive displacement piston meters for loading racks, tank trucks and service stations. A representative selection of Emco gas meters and regulators will also be on display as well as the Emco-McGaughy integrator for mechanically calculating orifice meter charts.

The Merco Nordstrom Valve Co. exhibit features a completely assembled christmas tree using Nordstrom valves throughout, including round opening, "Screw-Lift" drilling through plug valves; also Nordstrom lubricated plug valves for mud line service. The new Emco-Nordstrom lubricated plug valve having gate valve face to face dimensions will also be shown.

### PITTSBURGH STEEL CO.

**Booths 6 and 7, Texas Bldg.**

The Pittsburgh Steel Co., Union Trust Building, Pittsburgh, Pa., is exhibiting in Booths 6 and 7 in the Texas Building, with Ed W. Smith, C. V. Lally, S.



E. Elder, A. S. Vandervoort, Jr., Morvin Thomas, and Elmer T. Wible in attendance.

The exhibit features the new "Pittsburgh Special Drill Pipe," a new item

# Inside and outside—

## *Specially designed for oil and gas service*

NOTE the generous proportions of body, bonnet, flanges, stem and stuffing box of these typical Kennedy Valves for oil and gas service. Every element is designed and constructed to give dependable operation; and throughout all manufacturing processes, careful testing of raw material and each finished valve assure sound metal, thorough tightness and accuracy of all parts.

These are valves you can implicitly trust, and you will find all Kennedy Valves equally trustworthy. There is a suitable Kennedy type and size for every oil and gas industry requirement. Write for the Kennedy catalog describing these valves in detail and be sure to specify "Kennedy" on your next order.

The Kennedy Valve Mfg. Co., Elmira, N. Y.

*Representatives in principal oil centers*

**KENNEDY**

**VALVES-PIPE FITTINGS-FIRE HYDRANTS**

protected by U. S. Patents, having a tapered tight fitting shoulder that affords added bearing surface and added strength to the drill pipe, at the same time sealing the threaded areas against abrasive sands, and by eliminating rocking in threads the chief cause of breakoffs in threads is eliminated. Other Pittsburgh seamless items featured in the exhibit are: Casing, oil well tubing, plunger lift oil well tubing, cracking still tubes, heat exchanger tubes, as well as other items of the Pittsburgh Steel Co. plant.

### THE PLIBRICO JOINTLESS FIREBRICK CO.

**Booth 34, Scientific and Technical Bldg.**

The Plibrico Jointless Firebrick Co., 1840 Kingsbury Street, Chicago, Ill., is exhibiting in Booth 34 in the Scientific and Technical Building, with Dave Sherman, district manager, in attendance.

The exhibit features:

Plibrico Jointless Firebrick. A highest grade refractory material in plastic form, installed with a steel hammer and trimmed with a trowel. After being baked out by the fire, gives a solid, monolithic lining without any weakening joints, resistant to 3,100° F.

Plibrico Air-Set. A refractory concrete for door liners, ash pits, flue linings, etc. Is poured behind forms like concrete and set to concrete-like hardness without application of heat.

Plibrico Baffle-Mix. An air-setting refractory material for the construction of monolithic baffles in connection with water tube boilers.

Demon Air-Set. An air-setting high-temperature cement for laying firebrick. Shipped in moist, plastic form.

Demon Heat-Set. A super-refractory cement for severe combustion conditions. Shipped in dry, powdered form.

Plibrico Observation Port. A simple and inexpensive observation window for observing internal furnace conditions in boilers or stills.

Plibrico Steel-Cased Setting. A type of construction for boiler settings and stills. Can be economically air cooled.

### PODBIELNIAK INDUSTRIAL RESEARCH AND ANALYTICAL LABORATORIES

**Booths 12-13, Scientific and Technical Bldg.**

The Podbielniak Industrial Research and Analytical Laboratories, 222 East Superior Street, Chicago, Ill., is exhibiting in Booths 12 and 13 in the Scientific and Technical Building, with Dr. Walter J. Podbielniak, Mrs. Walter J. Podbielniak and Herbert Kaiser in attendance.

The exhibit features are logically divided into two groups as follows: Low temperature fractionation and size apparatus. The apparatus models are the A. J and K. Model A is a complete apparatus suitable for all types of low temperature precise fractionations of natural and refinery gases, manufactured gases, volatile, refrigerator, liquefied petroleum gases, natural gasolines, etc. Model J is similar to Model A in performance and has the same fractionating column assembly but is considerably simplified. Model K is announced for the first time at this exposition and should be of great interest to natural gas and natural gasoline men in that it is a simple and portable apparatus for the accurate determination of propane, butanes, and pentanes and heavier in natural gas without use of liquid air. The apparatus is entirely portable, needs no accessories and should replace the charcoal test now being widely used for the same purpose.

Various accessory indicating and control devices are offered for the above including a complete "robot" apparatus which runs the low temperature fractionating units more rapidly, more efficiently, and more accurately than the human operator; the human operator need only remain in the vicinity subject to the occasional call of the robot for assistance.

High temperature precise fractionating apparatus. The apparatus shown are the Models B, C and E. These models and their various arrangements make possible for the first time by highly precise fractionation of a variety of petroleum products such as motor fuels, gas oils and lubricating oils, in a comparatively simple and easy operated apparatus. Models B and E are arranged for distillation under vacuum down to about 2 mm. pressure.

The display includes a large neon sign illuminated temperature scale which graphically illustrates the entire scope of precise fractional distillation and the specific application of the various high temperature apparatus models. There are also shown panels of cartoons representative of the various hydrocarbons and other compounds found in and out of petroleum which the Podbielniak apparatus has been used to separate.

### WILLIAM POWELL CO.

**Cincinnati, Ohio**

**Booths 45 and 58, Scientific and Technical Bldg.**

### H. C. PRICE, INC.

**Booths 80 and 81, Oklahoma Bldg.**

H. C. Price, Inc., Bartlesville, Okla., is exhibiting in Booths 80 and 81 in the Oklahoma Building, with Harold C. Price, G. W. Fowler, and S. H. Paxon in attendance.

The exhibit features display of maps and photographs showing the progress and use of electric welding of field joints of oil and gas lines during the past five years; also specimens of line pipe with electric welded joints. H. C. Price, Inc., has electric welded the field joints in over 3,300 miles of oil and gas lines during the past few years. Their operations have covered the major fields in this country from Indiana to the Pacific Coast. This company's most recent development has been in the electric welding of oil lines of 12 inches or less in diameter without the use of backing up ring. All types of electric welded joints will be on display in their booths, including their latest development.

### PRICE-TRAWICK, INC.

**Booth 27, Scientific and Technical Bldg.**

Price-Trawick, Inc., Stroud, Okla., is exhibiting in Booth 27 in the Scientific and Technical Building, with L. M. Trawick and Fred Price in attendance.

The exhibit features three styles of P-T kickoff valves used in tubing for lowering starting pressures of air-gas lift wells and for increasing efficiency during flowing conditions. The valves are made standard two-way, external type and internal type, in sizes to accommodate 2, 2½ and 3-inch standard tubing

### PROGRESSIVE BRASS MANUFACTURING CO.

**Booth 11, Texas Bldg.**

The Progressive Brass Manufacturing Co., 1702 East Sixth Street, Tulsa, is exhibiting in Booth 11 in the Texas Building, with E. J. Thomas, N. A. Doolittle, and C. O. Beckett in attendance.

The exhibit features non-ferrous metal castings, consisting of sample castings, both rough and finished, in different bronze alloys—Everdur, Ampco, aluminum and many special alloys. Also finished replacement parts for gas, steam, and oil engines and clutches.

We make no special completed article for the oil industry, consequently our exhibit must be confined to the rough castings and finished parts, many of which are machined complete for other manufacturers.

### PURCHASING AGENTS ASSOCIATION

**Booth 22, Scientific and Technical Bldg.**

The Purchasing Agents Association of Tulsa, 315 Tulsa Building, Tulsa, is exhibiting in Booth 22 in the Scientific and Technical Building, with W. L. James, H. M. Cosgrove, and E. R. Welch in attendance.

The exhibit is educational as to the value of centralized purchasing in

Here's the Cardwell *Allsteel* PG-35 Pipeline Side Winch laying welded pipe over a ditch preparatory to cleaning, doping, wrapping and lowering.

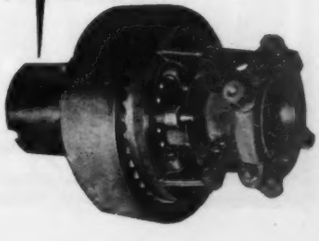
A sturdy, well balanced machine—with the entire winch motivated by a No. 8125 BFT-2-11½ Twin Disc Clutch at the power take-off. This type clutch is suitable for speeds up to 1000 rpm. and is built for heavy-duty service under severe conditions.

"We use only standard internationally known and proven equipment," says Mr. H. W. Cardwell, President of Allsteel Products Mfg. Co., makers of this winch. "The use of the Twin Disc Clutch simplifies the construction of our unit, but mainly makes the operation of the equipment more flexible. Twin Disc Clutches have universally proven themselves satisfactory."

*Write* for specific recommendations. Engineering data on request. *Twin Disc Clutch Company, 1328 Racine St., Racine, Wis.*

TWIN DISC CLUTCHES

*8125 BFT-2-11½ Twin Disc Clutch*



SALES and SERVICE

*Fort Worth*
Jno. Muller Co.,
312 Throckmorton

*Tulsa*
Buda Engine Service Co.
of Tulsa, Inc.

business and government. Descriptive literature explaining these purposes and methods will be distributed.

### THE PYLE-NATIONAL CO.
**Booth 62, California Bldg.**

The Pyle-National Co., 1334 North Kostner Avenue, Chicago, Ill., is exhibiting in Booth 62 in the California Building, with George E. Haas, R. L. Kilker and Alex Johnson in attendance.

The exhibit features gasoline electric plant, turbo-generators, floodlights, explosion proof conduit fittings and electrical plugs and connectors.

### PYOTT FOUNDRY & MACHINE CO.
**Block G on Grounds**

The Pyott Foundry & Machine Co., Chicago, Ill., is exhibiting in Block G on grounds, with Max E. Landry, Oklahoma City, Okla., in attendance.

The exhibit features a multiple V-belt drive.

### PYRENE MANUFACTURING CO.
**Booth 43, Oklahoma Bldg.**

The Pyrene Manufacturing Co., 560 Belmont Avenue, Newark, N. J., is exhibiting in Booth 43 in the Oklahoma Building, with W. L. Ferrier, B. S. Allen and Ferguson Alexander in attendance.

The exhibit features fire extinguishers of the Pyrene vaporizing liquid type 1 pint, 1½ quarts, 1 gallon, 2 gallons; Guardene wet chemical, soda and acid, type; Phomene foam type; Duragarde antifreezing pump type; Phomene 40 gallons; Foam type engines; Phomene accumulator; semicontinuous foam generator; Phomene hopper, continuous foam generator; Phomene solution hopper; Phomene foam making powder.

### QUIGLEY CO., INC.
**Booths 35-36, California Bldg.**

The Quigley Co., Inc., 56 West Forty-fifth Street, New York, N. Y., is exhibiting in Booths 35 and 36 in the California Building, with W. H. Gaylord, Jr., vice president, and Treasurer Prosser in attendance.

The exhibit features a complete line of refractory products. In addition to Hytempite and other Quigley refractory cements and plastics, they are showing for the first time their Missouri and New Jersey brands of high grade fire

brick, introduced a short time ago. Although new in name, these are time-proven products, comparable in quality with other Quigley products made by the Quigley organization for the past 20 years. In addition to refractories, other products of the eastern firm will be featured, including Triple-A protective coatings for preventing corrosion of iron and steel, Q-Seal joint sealing compound for oil and high pressure steam lines, and Quigley acid proof cements.

### REDA PUMP CO.
**Block C, on Grounds**

The Reda Pump Co., Bartlesville, Okla., is exhibiting on Block C on grounds, with C. C. Brown, A. Arutunoff, S. N. VanWert, J. C. Hutchins, S. C. Beesley and F. R. Flint in attendance.

The exhibit features a complete line of Reda equipment, with a pumping unit running in well on our location.

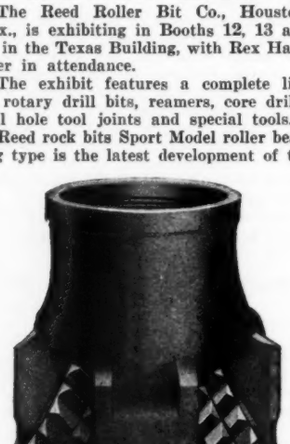
On display will be our 97½-horsepower unit, the type now operating in Oklahoma City, together with a full line of smaller horsepower units operating in all other Mid-Continent fields.

### REED ROLLER BIT CO.
**Booths 12-13-14, Texas Bldg.**

The Reed Roller Bit Co., Houston, Tex., is exhibiting in Booths 12, 13 and 14 in the Texas Building, with Rex Hamaker in attendance.

The exhibit features a complete line of rotary drill bits, reamers, core drills, full hole tool joints and special tools.

Reed rock bits Sport Model roller bearing type is the latest development of the



Reed Roller Bit Co. The bit is made with either box or pin connections for attachment direct to or run under rotary reamers or drill collars.

There are several designs of cutters to meet all classes of formations found in all parts of the world such as sticky formations, hard lime, anhydrites, marls, sandstones, basalts, volcanic ash, pyrites, tough shales and so forth.

The Reed type 33 reamer guide will be on exhibition. The reamer bodies are forged of chrome-nickel alloy steel and heat-treated.

### REEVES PULLEY CO.
**Block G on Grounds**

The Reeves Pulley Co., Columbus, Ind., is exhibiting in Block G on grounds, with Max E. Landry, Oklahoma City, Okla., in attendance.

The exhibit features vari-speed motor pulleys and the Reeves variable speed transmission equipment.

### REFINERY SUPPLY CO.
**Booths 8-9, Scientific and Technical Bldg.**

The Refinery Supply Co., 621 East Fourth Street, Tulsa, is exhibiting in Booths 8 and 9 in the Scientific and Technical Building, with W. A. Schlueter, J. B. Okeson, H. F. Goodenough, T. C. Williams, S. M. Rudolph and P. T. Sprague in attendance.

The exhibit features instruments for gas testing including Ac-Me Specific Gravity Gas Balance and Ac-Me Recording Gravitometer. Also combustion instruments and flow meters for boiler control. New instruments on exhibit will include a three-in-one plumb bob for oil gaugers' tapes. This bob provides for the reading of the tank temperature and also the amount of water in the bottom of the tank when the oil is being gauged.

### REPUBLIC STEEL CORP.
**Booths 17-18-19-20-21-22, California Bldg.**

The Republic Steel Corp., Youngstown, Ohio, is exhibiting in Booths 17, 18, 19, 20, 21 and 22, California Building, with W. N. Nickerman, J. E. Holmes, F. H. Ramage, G. D. Hess, Bob Finkenstaedt, C. W. Ruth, R. E. Lanier, John Phillips, George Walker, Roy Levantry and C. S. Powers in attendance.

The exhibit features electric-welded Grade C and D casing and tubing. The important steps of manufacture in proper sequence will be portrayed on the ex-

Monsanto Chemicals

*for the* OIL INDUSTRY, *include*

Muriatic Acid

18°, 20° Beaumé

Sulfuric Acid

60°, 66° Beaumé — 98% and Oleum

Both Muriatic and Sulfuric are of uniform strength and dependable. Available for prompt shipment in carboys and tank cars from our works at Monsanto (East St. Louis), Illinois.

Inhibitor Acid

Our steel picklers' inhibitor "Hibitite" minimizes the rate at which Muriatic Acid and Sulfuric Acid attack metals. Shipped promptly from Monsanto, Illinois.

*Also* **PHENOL U.S.P.** (for "lube oil" refining) — **SODIUM SULFITE** (a high-grade reducing agent) and many others.

*Manufactured by*

Monsanto Chemical Company

St. Louis, U.S.A.

*"There are no better chemicals than* CHEMICALS of QUALITY Monsanto ST. LOUIS, U.S.A. *those bearing the Monsanto label."*

hibit background by the use of photographic enlargements six feet square, such as slitting skelp, cold forming, electric welding, straightening, threading and testing and inspection.

Agathon alloy steels will also be exhibited in various forms, such as a complete line of drilling tools.

Toncan iron electric-welded tubing, especially resistant to sour crudes and salt water, and Toncan standard weight pipe for refinery applications, such as acid sludge lines, will be shown.

Other Republic products, such as Upson nuts and bolts, and steel and tubes Electrunite boiler tubes, condenser tubes and conduit, will be listed.

Enduro stainless steel 18 and 8 and 4 to 6 per cent chromium steel in various forms will be offered in their latest forms of development.

### REPUBLIC SUPPLY CO.
**Booths 51-52, California Bldg.**

The Republic Supply Co., Houston, Tex., is exhibiting in Booths 51 and 52, California Building, with P. R. King, J. H. Castleberry, Webbe Clift, S. L. Rucker, G. H. Jennings, J. C. Underwood and J. H. Brooks in attendance.

The exhibit features a general reception booth in which the products of the Edwards Wire Rope Co., Republic Steel Corp., B. F. Goodrich Rubber Co., Wm. Powell Co., Gadke and American Well & Prospecting Co. will be on display.

### H. RICKMAN
**Tulsa, Okla.**
**Booth 16, Arcade**

### RIDGE TOOL CO.
**Gates Hardware Co. Bldg.**
**Outside Space on Grounds**

### RIDGEWAY DYNAMO ENGINE CO.
**Ridgeway, Pa.**
**Booth 111, Oklahoma Bldg.**

### RIVET CUTTING GUN CO.
**Booths 29-30, Texas Bldg.**

The Rivet Cutting Gun Co., 125 East Third Street, Cincinnati, Ohio, is exhibiting in Booths 29 and 30 in the Texas Building, with W. E. Corby and W. J. Raining in attendance.

The exhibit features Model 30 Cincinnati Rivet Cutting Gun, and accessories used with it, such as cutting chisels, backing out punches, flatters, tool retainer and rivet head catcher.

### ROBINSON PACKER CO.
**Booth 5, Oklahoma Bldg.**

The Robinson Packer Co., 210 North Main Street, Tulsa, Okla., and Coffeyville, Kans., is exhibiting in Booth 5 in the Oklahoma Building, with H. L. Kime and W. A. Melton in attendance.

The exhibit features oil and gas well packers and the Limit Plug.

### REMORT MANUFACTURING CO.
**Oakfield, Wis.**
**Block F, on Grounds**

### ROTARY LIFT CO.
**Booth 51, Refiners and Marketers Bldg.**

The Rotary Lift Co., 1055 Kentucky Street, Memphis, Tenn., is exhibiting in Booth 51 in the Refiners and Marketers Building, with C. W. Eiserer and E. Wendler in attendance.

The exhibit features a full size cutaway model of a rotary lift jack; a full size rotary lift electric pumping unit; cross sections of both free-wheel and roll-on superstructures with all attachments, and a miniature working model of a free-wheel type lift.

The miniature model is arranged in a cabinet so as to correspond to an actual installation. The outer cylinder of the lift jack is constructed of transparent material so that the internal parts and the operation of the jack are plainly visible.

### D. ROUND & CO.
**Cleveland, Ohio**
**Booths 29 and 30, Texas Bldg.**

### THE SAFETY EQUIPMENT SERVICE CO.
**Booth 65, California Bldg.**

The Safety Equipment Service Co., 1228 St. Clair Avenue, NE, Cleveland, Ohio, is exhibiting in Booth 65 in the California Building, with B. W. Nutt in attendance.

The exhibit features a complete line of accident prevention equipment, such as goggles, respirators, gas masks and welding helmets, ladder shoes, all types of safety clothing, such as leggings, gloves and suits.

### SANGAMO ELECTRIC CO.
**Springfield, Ill.**
**Booths 32 and 33, California Bldg.**

### SCHRAMM, INC.
**Block E, on grounds**

Schramm, Inc., West Chester, Pa., is exhibiting in Block E on grounds, with F. H. Wharton in attendance.

The exhibit features compressors powered by "Caterpillar" engines. A complete line of sizes are available in both gasoline and Diesel engine powered machines. Compressors powered by Diesel engines in sizes from 180 cubic feet to 450 cubic feet. Gasoline engine-driven compressors are built in sizes from 120 to 360 cubic feet displacement.

### SCHUTTE & KOERTING CO.
**Booth 63, Scientific and Technical Bldg.**

The Schutte & Koerting Co., Philadelphia, Pa., is exhibiting in Booth 63 in the Scientific and Technical Building, with W. D. Moorer and K. K. Fischer in attendance.

The exhibit features the Rotameter, a flow metering instrument used to accurately measure rates of flow of oil, air, gas, chemicals, water, and other fluids.

It consists essentially of a vertical tube having a tapered bore.

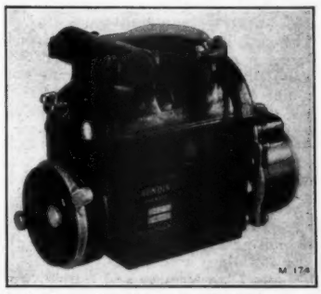
The rotor rotates rapidly in the center of the fluid stream by means of specially shaped slots. This makes the operation frictionless and therefore the readings are extremely accurate.

Some advantages are visibility, reliability, accuracy, wide capacity range, ease of installation and cleaning, corrosion resistance, low and uniform pressure loss, absence of meter fluids, ease of range adjustment and uniform spacing of flow graduations.

### SCINTILLA MAGNETO CO, INC.
**Booth 8, Oklahoma Bldg.**

The Scintilla Magneto Co., Inc., Sidney, N. Y., is exhibiting in Booth 8 in the Oklahoma Building, with D. J. Wilber, J. H. Mayforth and A. J. Poole in attendance.

The exhibit features Scintilla and Bendix magnetoes, a new magneto par-

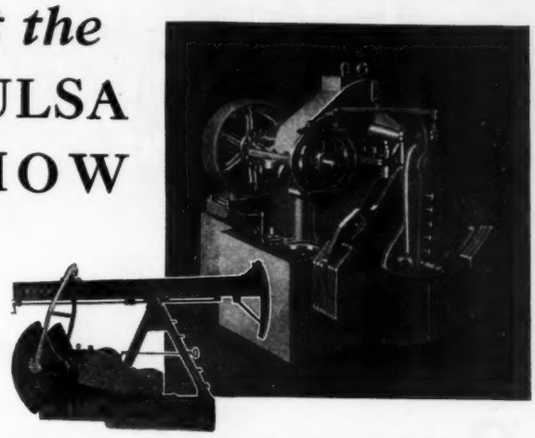


ticularly well suited to oil field requirements, being completely enclosed and protected against dust, dirt, oil and water.

This magneto is demonstrated in operation enclosed in a cylinder containing inflammable gas. The inflammability of the gas is tested from time to time by igniting it from a spark plug in the cylinder wall. Means are provided to prevent explosive pressure being developed in the demonstration.

A sectionalized cutaway magneto is shown in actual operation to demonstrate its construction. In addition, a complete


# See these IDECO geared pumping units "DOING THEIR STUFF" *at the* TULSA SHOW

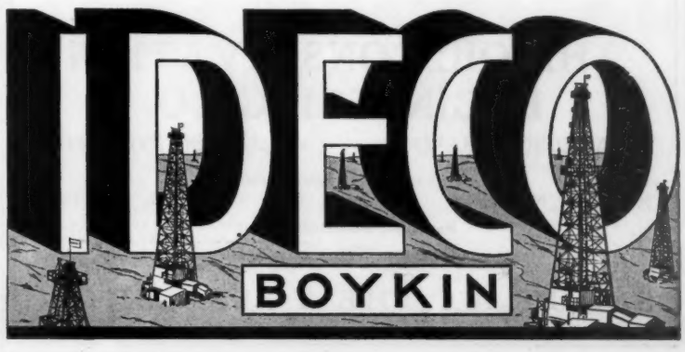


WHEN the pressure fails, your pumping units must be ready or production stops. Tulsa is your show—a place to get first-hand information on what's new in the industry. Be sure to go—and be sure, while there, to see the powerful, smooth-working, trouble-proof IDECO GEARED PUMPING UNITS in action at the IDECO exhibit. Examine in particular the new four-wing, back-side crank which will be demonstrated on our HM-67 unit. Nothing like it for multiple well pumping. Enables you to keep the unit operating in balance, even though one or more of the wells is shut down for repairs.

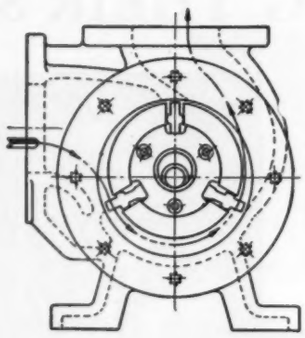
It will pay you to know about IDECO geared pumping units before selecting any others. See them at the Tulsa show or write for bulletin No. 100-D.

**THE INTERNATIONAL DERRICK AND EQUIPMENT COMPANY**

Columbus, Ohio; Los Angeles, Cal.; Beaumont, Tex.
Branches in all leading oil centers.



# ANNOUNCING



*a Better*

# ROTARY PUMP by OCECO

AFTER many months of highly satisfactory operation under various conditions in the plants of a number of oil companies, the Oceco Turborotor Pump is now being offered to the industry.

Its action approaches that of a centrifugal pump without sacrificing positive suction or delivery.

It is well liked by oil men because:

No blades rubbing outer wall.
No outboard bearings to line up.
No eccentric moving parts.
Can be dismantled and reassembled without special tools by any operator.
Low power consumption.
Good for 250 pounds per square inch or higher on special order.

Write for complete details.

**THE OIL CONSERVATION ENGINEERING CO.**

877 ADDISON ROAD - - - - CLEVELAND, OHIO

*Engineering and Sales Service:*

90 West St., New York — Box 1387, Tulsa, Okla.

Box 3052, Beaumont, Texas

Marquette Bldg., Chicago, Ill.

SEE IT AT THE TULSA SHOW


selection of Scintilla and Bendix automotive and industrial type magnetos is on display.

**SCOVILLE MANUFACTURING CO.**
**Waterbury, Conn.**
**Booth 60, Oklahoma Bldg.**

W. D. Moorer in attendance.

**SEISMOGRAPH SERVICE CORP.**
**Booth 11, Scientific and Technical Bldg.**

Seismograph Service Corp., 709 Kennedy Bldg., is exhibiting in Booth 11 in the Scientific and Technical Building, with C. H. Frost, W. G. Green, George F. Martin, G. H. Westby and J. L. Greenfield in attendance.

The exhibit features complete field equipment for making surveys by seismic reflection method.

Moving picture illustrating theory and practice of field seismic technique.

**SERVICE STATION EQUIPMENT CO.**
**Conshohocken, Pa.**
**Booth 30, California Bldg.**

**J. E. SHAFFER CO.**
**Tulsa, Okla.**
**Block C, on Grounds**

**SHAFFER SPECIALTY CO.**
**Outside Space on Grounds**

The Shaffer Specialty Co., Tulsa, is exhibiting on Outside Space on Grounds with E. J. Shaffer, G. W. Shaffer, Oscar Orrick and S. H. Brant in attendance.

The exhibit features a combination portable cable tool and rotary drilling outfit that will be turning over and operated as either type unit. The capacity of the machine is rated at 4,500 feet of hole and it is powered with a 185 horsepower Waukesha gas, gasoline or oil engine.

In addition to this outfit numerous items of small equipment such as East Texas casingheads, tubing supports, gas lift flowing equipment, Bear-Cat hoisting equipment will be shown. The Bear-Cat hoist is for mounting upon either a McCormick-Deering tractor and operated by takeoff from the power unit of the tractor, or upon any truck and powered with Waukesha engine.

**SHENANGO PENNSYLVANIA MOLD CO.**
**Pittsburgh, Pa.**
**Booth 43, Texas Bldg.**

With Duraloy Co.

**THE SHERWIN-WILLIAMS CO.**
**Booths 53-54, Oklahoma Bldg.**

The Sherwin-Williams Co., Cleveland, Ohio, is exhibiting in Booths 53-54 in the Oklahoma Building with K. H. Wood, John Schlintz, H. R. Hefley, J. R. Stevenson, A. V. Higgins, C. E. Siebert and A. W. Everett in attendance.

The exhibit features S-W Kromik primer, a rust inhibitive primer; S-W Silver-Brite aluminum; S-W Lyne coat pipe line coating and Petro-Seal for tanks. These products are all protective coatings for the petroleum industry.

**S. K. F. INDUSTRIES. INC.**
**Booths 52-53 Texas Bldg.**

The S. K. F. Industries, Inc., Front Street and Erie Avenue, Philadelphia, Pa., is exhibiting in Booths 52 and 53 in the Texas Building, with R. H. DeMott, H. L. Gaddis, Otto Neumer and Daniel Crull in attendance.

The exhibit features a complete range of heavy duty ball and roller pillow blocks and bearings, together with interesting models showing antifriction characteristics of ball and roller bearings.

**SLUDGE PUMPING. INC.**
**Booth 88, Oklahoma Bldg.**

The Sludge Pumping, Inc., Pier 18, North River, New York City, is exhibiting in Booth 88 in the Oklahoma Building, with Charles A. G. Armstrong, president, and Mrs. Chara M. Armstrong, in attendance.

The exhibit features an annular steam jet pump that removes and reclaims any oil sludge. This pump is portable, and will operate on steam pressures as low as 65 pounds.

The ArmEng sludge pump, 1½-inch flexible steel hose and 4-inch flexible steel

discharge hose, comprises the entire equipment.

The sludge subjected to a terrific steam velocity is broken up into its original oily condition, thus enabling it to be again transferred over great distances and used as plant fuel.

**E. M. SMITH CO.**
**Booth 44, California Bldg.**

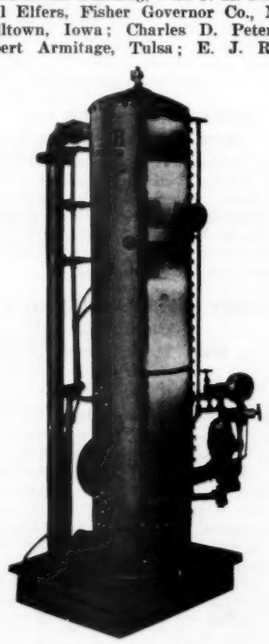
The E. M. Smith Co., Los Angeles, Calif., is exhibiting in Booth 44 in the California Building with E. M. Smith and Walter G. L. Smith in attendance.

The exhibit features a life size painting of the "Grizzly Bear" by the well known artist, Harry M. Waddell. The picture is approximately 6 by 10 feet and created wide interest at former showings. "Grizzly" is the registered trade name of the company's oil field and other well known products.

Among the products to be exhibited are: Grizzly full-molded brake blocks, Grizzly Powerflex rotary hose and couplings, Grizzly drill pipe protectors and Grizzly raw-edge belting.

**SMITH SEPARATOR CORP.**
**Booths 89-90-121-122, Texas Bldg.**

The Smith Separator Corp., Tulsa, is exhibiting in Booths 89, 90, 121 and 122 in the Texas Building, with J. H. Fisher, Paul Elfers, Fisher Governor Co., Marshalltown, Iowa; Charles D. Peterson, Robert Armitage, Tulsa; E. J. Riley,



R. S. McKeefer, Cy Williams, J. F. Buford, E. C. Kopp, R. F. Mackin and T. E. Ward in attendance.

The exhibit features a number of major items of the Fisher Governor Co. consisting of electric operated valve and sectionalized models of regulators.

Also a unique working model of a Smith oil and gas separator, the Ever-Ready tubing catcher, and a tubing lock, a new tool shown for the first time.

### THE SONNER BURNER CO.
**Booth 98, Oklahoma Bldg.**

The Sonner Burner Co., Winfield, Kans., is exhibiting in Booth 98 in the Oklahoma Building, with P. J. Sonner and F. W. Budd in attendance.

The exhibit will feature the Sonner Arcola burner, the Sonner heat machine and the Sonner utility burner, all suitable for use in gas burning in furnaces or under boilers. The display will show the burner in operation.

### SOUTHERN CONTAINER CO.
**Houston, Tex.**
**Booth 50, Refiners and Marketers Bldg.**

### SOUTHWEST BOX CO.
**Booth 18, Refiners and Marketers Bldg.**

The Southwest Box Co., Box 37, Sand Springs, Okla., is exhibiting in Booth 18 in the Refiners and Marketers Building, with R. N. Hoerner, W. W. Jackson and J. V. Wilson in attendance.

The exhibit features corrugated fiber boxes which are used very extensively by manufacturers of petroleum products in shipping grease, and more especially now, canned oils.

### SPANG, CHALFANT & CO., INC.
**Booths 44-45, Texas Bldg.**

Spang, Chalfant & Co., Inc., Pittsburgh, Pa., occupies Booths 44 and 45 in the Texas Building, with H. G. Texter, Tulsa, and J. D. Hardcastle, St. Louis, Mo., and T. L. Kirk, Pittsburgh, Pa., in attendance.

The Spang, Chalfant & Co., Inc., are not exhibiting any of their tubular goods, having booth space only for the convenience of their friends and customers.

### SPARTAN SAW WORKS
**Gates Hardware Co. Bldg.**
**Outside Space on Grounds**

### SPENCER TRAILER CO.
**Augusta, Kans.**
**Outside Space on Grounds**

### SPERRY-SUN WELL SURVEYING CO.
**Booth 14, Scientific and Technical Bldg.**

The Sperry-Sun Well Surveying Co., 1608 Walnut Street, Philadelphia, Pa., is exhibiting in Booth 14 in the Scientific and Technical Building, with G. L. Kothny, vice president, A. B. Palmer and T. C. Haller in attendance.

The exhibit features two well surveying instruments, the Syfo Clinograph which gives vertical deviation of well and the Surwell Clinograph for vertical and directional deviation of well surveying.

### STANDARD ELECTRICAL TOOL CO.
**Booths 29-30, Texas Bldg.**

The Standard Electrical Tool Co., 1938 West Eighth Street, Cincinnati, Ohio, is exhibiting in Booths 29 and 30 in the Texas Building, with W. E. Corby and W. J. Raining, Corby Supply Co., St. Louis, Mo., inattendance.

The exhibit features the Standard Electrical Tool Co.'s electric drills in several

types, manufactured in one-quarter, five-sixteenths, three-eighths, one-half, five-eighths, three-quarters, seven-eighths, 1, 1¼ and 1½-inch sizes.

Special oversize Universal motors were developed for these drills by the General Electric Co. SKF ball bearings are used. A patented strain reliever prevents disconnection of the cord in the switch box.

Also Standard Electrical Tool Co. exhibits a portable electric grinder which is equipped with a General Electric Universal motor for A.C., or D.C. currents.

This is a three-quarters horsepower machine equipped with a 6-inch diameter by 1-inch face grinding wheel. Trigger switch is mounted in the handle. Also made in one-quarter, one-half, 1, 2 and 3-horsepower sizes. A special bench stand can be furnished, easily converting the portable grinders into bench grinders for tool sharpening and grinding small castings.

The Standard Electrical Tool Co. is showing a 1-horsepower pedestal grinder which is equipped with a General Electric motor. This machine carries two 10-inch diameter by 1-inch face grinding wheels which are protected by enclosed safety guards, adjustable to the wear of the wheels.

A manual switch is mounted on the motor convenient to the operator. SKF ball bearings are used. Equipment includes tool tray and water pot.

Manufactured in one-quarter horsepower up to and including 15-horsepower sizes.

### STAYNEW FILTER CORP.
**Booths 29-30, Texas Bldg.**

The Staynew Filter Corp., 25 Leighton Avenue, Rochester, N. Y., is exhibiting in Booths 29 and 30 in the Texas Building, with L. L. Dollinger, president; J. B. Corby, St. Louis, Mo., distributor, and M. J. McGregor, Tulsa distributor, in attendance.

The exhibit features air filters of the dry type.

### STEEL IMPROVEMENT & FORGE CO.
**Cleveland, Ohio**
**Booth 28, Scientific and Technical Bldg.**

### STEEL SALES CORP.
**Chicago, Ill.**
**Booths 4 and 5, Texas Bldg.**

### STERLING CABLE CORP.
**Booths 27-28, California Bldg.**

The Sterling Cable Corp., 3529 Twenty-fourth Street, Port Huron, Mich., is exhibiting in Booths 27 and 28 in the California Building, with V. F. Dobbins, R. B. Myers, L. D. Tuttle, Stafford Jones and Ben Wright in attendance.

### STITT IGNITION CO.
**Booth 19, Oklahoma Bldg.**

The Stitt Ignition Co., 86 East First Avenue, Columbus, Ohio, is exhibiting in Booth 19 in the Oklahoma Building, with R. E. Day and M. C. Elworthy of Magneto Ignition Co., Inc., in attendance.

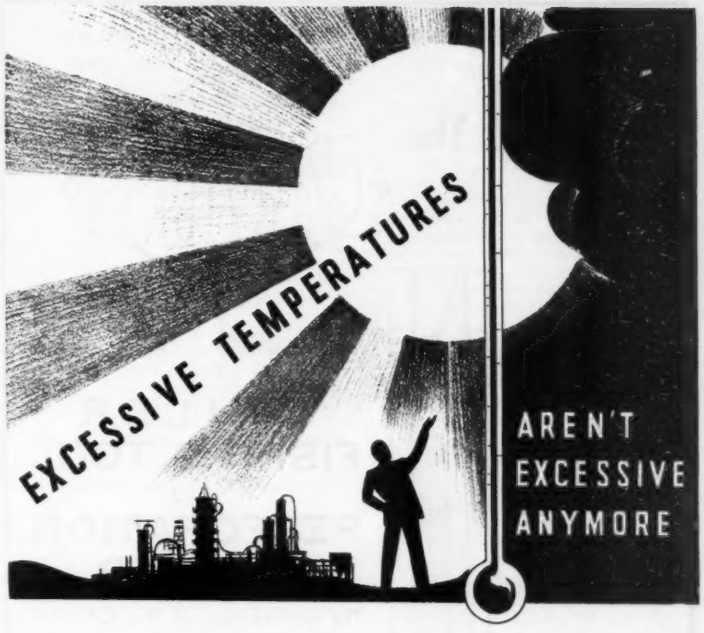
The exhibit features Stitt spark plugs.

### THE SULLIVAN CO.
**Memphis, Tenn.**

The Sullivan Co., Memphis, Tenn., is exhibiting at International Petroleum Exposition with representatives from home office in attendance.

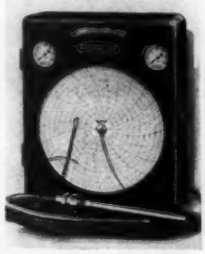
The exhibit features Konset, a liquid cement accelerator, hardener and waterproofing compound; Slush-Mix, mud heavier, lubricator and sealer; Gelite, a gel colloid which improves drilling mud; Hef-T, heavy drilling mud; Fissurseal, an agglutinant, precipitating and waterproofing compound; Cmento, a compound for cementing wells.

Oil well reviver, liquid compound, which frees the sand of paraffin, asphaltum and other accumulations; Kleen-a-well, a powder product that cuts paraffin off the oil sand, rock and out of tubing; Kleen-Oil, for reclaiming cut oil; Deflect-O-Lite aluminum paint; Gardex, an oilfield utility paint for metal surfaces; Sealcote No. 3, a colorless material for rust-proofing and preserving any surface; Wood Cement, a plastic wood for repairing almost any surface; Kant-Leak, asbestos plastic cement for waterproofing roofs, stills and tank tops; Sulco furnace cement, for laying up brick or surfacing;


A FREQUENT source of "grief" in top tower temperature control has been the bursting of instrument thermal elements when tower temperatures climb beyond instrument ranges.

After the return of a few ruptured thermal systems for refilling, Mason-Neilan engineers conducted several months of experimenting and field tests which resulted in the development of the Over-Heat Protector . . . a safety feature that definitely protects the thermal element from injury if temperatures exceed the instrument range. This new protector can be furnished with any Mason-Neilan temperature instrument and eliminates the necessity of withdrawing bulbs as a precaution against over-range temperatures caused by the stopping of a reflux pump or a shutdown of the plant.



This advancement and all other Mason-Neilan Regulators and Instruments have been developed *in and for* the Oil Industry by engineers who know its requirements. Safeguard your plant and product with exact control of pressure, temperature, and rate-of-flow . . . specify Mason-Neilan Control Equipment.

MASON-NEILAN
REGULATOR COMPANY
1190 Adams Street, Boston, Mass.

| | |
|---|---|
| BALTIMORE, Whitaker Bldg. | Morton McI, Dukehart & Co. |
| CHICAGO, 435 North Michigan Ave. | Gordon Thomason, Mgr. |
| HOUSTON, 1400 Conti St. | Maintenance Engineering Corp. |
| LOS ANGELES, 2446 Enterprise St. | Tunnell & Co. |
| MONTREAL, CANADA, 620 Cathcart St. | Maurice Peiler, Mgr. |
| NEW YORK, 19 Rector St. | Rudolph B. Werey, Mgr. |
| PHILADELPHIA, 930 North Front St. | Baeuerle & Morris, Inc. |
| PITTSBURGH, Clark Bldg. | Bruce Irwin, Mgr. |
| ST. LOUIS, 2726 Locust Blvd. | O'Brien Equipment Co. |
| SYRACUSE, N. Y., 640 Gurney Bldg. | O'Brien Steam Specialty Co. |
| TULSA, 409 East Archer St. | Moorlane Co. |

YOU CAN BE SURE OF MASON-NEILAN PRODUCTS

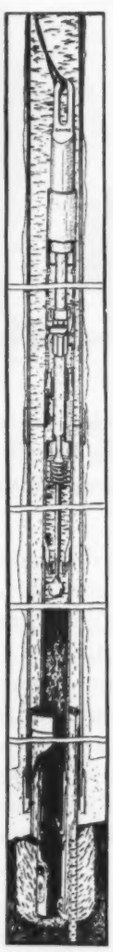
1022

3 TOOLS IN ONE

The CAVINS

*Hydraulic-Suction*

Used Successfully in the BINGER WELL to Remove Bridges at 8,270 Feet and 9,300 Feet.



BAILER FISHING TOOL and PERFORATION WASHER

The performance of The CAVINS in the A-Dah Noe, known as the "Binger Well," six miles east of Binger, Oklahoma, is a good example of the effectiveness of this tool when used for reconditioning or cleaning out.

The first bridge was encountered at 8,270 feet; the second at 9,300 feet. Each one was removed in one run.

FAST—EFFICIENT

It is no longer necessary to rig up a string of tools to break hard packed "bridges." Run The CAVINS as soon as the tubing is pulled. (Small size tools are used for cleaning out bridges in the tubing.) It operates at high speed; allows three seconds for loading and eighteen seconds for dumping. Ordinarily it will have the hole cleaned out in less time than it takes to get other methods in operation.

and—IT RECOVERS EVERYTHING

The CAVINS recovers everything that can be removed from the hole; fine powdered sand, pipe; cuttings; millings; hard packed bridges; slips; rocks; and large pieces of metal weighing up to 45 pounds each; just as fast as the tool can be run in and out of the hole.

*Left: Illustration from unretouched photograph of 8½-lb. and 9-lb. slips recovered from wells with The CAVINS.*

*Right: One load of millings (75 pounds) recovered from one well with The CAVINS.*

It's The EASIEST, BEST and CHEAPEST WAY to Recondition or Clean Out Your Wells.

*There is only one CAVINS—the original Hydraulic-Suction BAILER, FISHING TOOL, and PERFORATION WASHER—Three Tools in One. Write for Bulletin.*

The CAVINS COMPANY

2853 Cherry Avenue Phone 414-14 Long Beach, California, U. S. A.

*Mid-Continent Branches:*

Houston, Texas 2101 Truxillo Ave. | Oklahoma City, Okla., Phone 3-9887 | McPherson, Kans. Phone 427

R. J. EICHE, *Export Representative.*

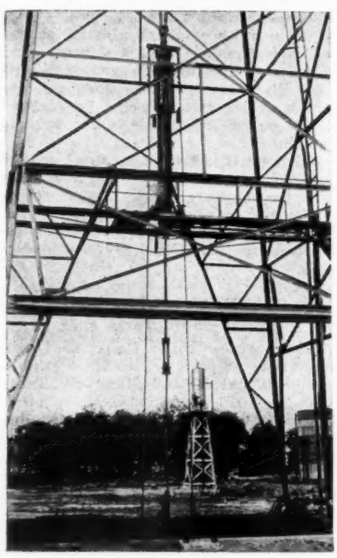
Permite, a high temperature cement; Mud-Flux, a mud thinner; Solrite, for boiler feed water; Rustcotine, a rust inhibitive and preservative, and Sulco pipe line coating and coupling paint.

### SULLIVAN MACHINERY CO.

**Outside Space on Grounds**

Sullivan Machinery Co. 400 North Michigan Avenue, Chicago, Ill., is exhibiting in outside space on grounds, with P. D. Cornelius, D. M. Sutor, H. T. Walsh, W. H. Wineman, C. B. Officer and J. E. M. Schultz in attendance.

The exhibit features a complete in-



stallation of a Sullivan pneumatic pumping head operation.

This new and simple means of applying power to sucker rods for pumping wells is designed and built to provide long stroke up to 12 feet.

Experienced engineers will be in charge of the exhibit to demonstrate the operation of the equipment and furnish additional information.

### SUN OIL CO.

**Booths 52-53, Refiners and Marketers Bldg.**

The Sun Oil Co., 1608 Walnut Street, Philadelphia, Pa., is exhibiting in Booths 52 and 53 in the Refiners and Marketers Building, with R. A. Searle, Tulsa, in attendance.

The exhibit features Sun Oil Co.'s complete line of oils and greases in a booth with an attractive sunburst background, while the other pieces of display apparatus will feature the advantages of Sun lubricants.

Particular emphasis will be made to prove the advantages of wholly distilled heavy oils for blending with neutral oils to obtain intermediate S.A.E. grades of excellent color with minimum carbon content so necessary for present day high-compression motors. An illuminated bottle display rack will allow comparison of the resulting S.A.E. grades obtained by blending various oils.

In addition samples of high quality special oils and various greases will be displayed.

### SURFACE EQUIPMENT CO.

**Booth 64, Oklahoma Bldg.**

The Surface Equipment Co., 1234 Hunt Building, Tulsa, is exhibiting in Booth 64 in the Oklahoma Building, with Wade H. James, Jr. in attendance.

The exhibit features rod line pumping equipment.

### C. J. TAGLIABUE MANUFACTURING CO.

**Booths 32-33, Scientific and Technical Bldg.**

The C. J. Tagliabue Manufacturing Co., 540 Park Avenue, Brooklyn, N. Y., is exhibiting in Booths 32 and 33 in the Scientific and Technical Building, with W. C. Begeebing, manager oil division; A. G. Koenig, southwestern sales manager; H. Jungerman, Pacific Coast sales manager; C. L. Huffman, Shreveport factory manager, and J. M. Coffeen, Tulsa representative, in attendance.

Tagliabue exhibits its complete line of refinery recorders and controllers for temperature, pressure, level and flow. Particularly featured is the TAG recording potentiometer, photoelectrically balanced and using a fully enclosed mirror galvanometer which is the fastest, most sensitive, highest resistance and most rugged in industrial use.

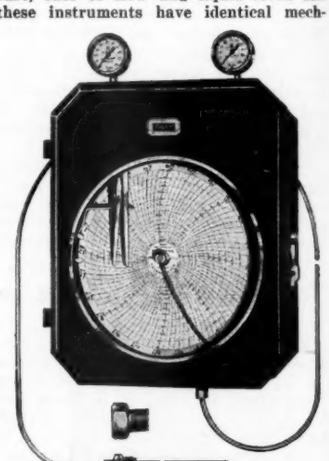
The Uniflow level controller with 5-foot vertical float travel giving averaging outflow regulation over 4 feet of level change, always slowly returning the level to mid-point and always preventing flooding or draining of apparatus by fast limit action. The new TAG rectangular die-cast aluminum case with many improved features is also displayed.

### TAYLOR INSTRUMENT COMPANIES

**Booths 35-36, Scientific and Technical Bldg.**

The Taylor Instrument Companies, Rochester, N. Y., is exhibiting in Booths 35 and 36 in the Scientific and Technical Building, with A. J. Fleig, E. H. Triphaus, L. G. Marsh and H. A. Brown in attendance.

The exhibit features the new Taylor Fulscope regulator for temperature, pressure, rate of flow and liquid level. All these instruments have identical mech-



anisms and similar method of operation and embody the Taylor "Sensitivity Adjuster," the most important development in this type of regulator in many years.

Also features will be the Taylor Dubl-Response control unit in operation, the new Taylor flow recorders, Taylor self-acting regulators and Taylor Easykleen hydrometers. Panel exhibits will show the construction of these hydrometers and Taylor etched stem thermometers.

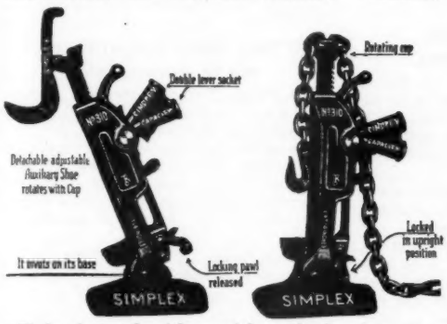
An interesting feature of the Taylor booth will be a large photo illustration of the air conditioning system control panel of Taylor regulators, installed in the N.B.C. studies in Radio City, New York. This is probably the outstanding instrument installation of the year and furnishes one of the high spots of the tour through this great broadcasting center.

### TEMPLETON, KENLY & CO.
**Booth 42, Texas Bldg.**

The Templeton, Kenly & Co., 1020 South Central Avenue, Chicago, Ill., is exhibiting in Booth 42 in the Texas Building, with J. B. Templeton and G. L. Mayer in attendance.

The exhibit features a shadow box in which the action of standardized mechanism of the Simplex automatic lowering ratchet type jack may be seen. The jack will continually be raised and lowered by means of a small electric motor.

The No. 310 Simplex emergency jack, single acting and automatic lowering,




will be featured with special emphasis on the pivoting base—the double lever socket, V-shaped cap, and the steel chain and auxiliary shoe.

Simplex ball bearing screw jack, which supersedes the old-fashioned ordinary screw jack, and which is 88 per cent more efficient at no additional cost, will be shown for the first time at an exposition.

Other new jacks are the No. 600 Series of push, pull, spread, clamp, lift and gear pulling jack.

Simplex adjustable tank supports, which show appreciable saving over structural supports or solid cradles.

### THE TEXAS CO.
**Booths 31-32, Refiners and Marketers Bldg.**

The Texas Co., Dallas, Tex., is exhibiting in Booths 31 and 32 in the Refiners and Marketers Building, with J. W. Wallace, W. H. Noble and C. B. Barrett in attendance.

The exhibit features Texaco petroleum products.

### TEXAS CORRUGATED BOX CO., INC.
**Booth 50, Refiners and Marketers Bldg.**

The Texas Corrugated Box Co., Inc., Dallas, Tex., is exhibiting in Booth 50 in the Refiners and Marketers Building, with W. W. Macrum and Robert Gaylord in attendance.

The exhibit features corrugated board containers for petroleum products. This company is a subsidiary of Robert Gaylord Co., St. Louis, Mo.

### R. D. THOMPSON & CO.
**Booth 48, California Bldg.**

The R. D. Thompson & Co., Okmulgee, Okla., is exhibiting in Booth 48, California Building, with Frank Wilcom, superintendent, A. B. Settle, R. D. Thompson, Vaughn Twibell, Claude Best and W. P. Knowles in attendance.

The exhibit features three types of pumps. An inverted combination cup and plunger pump, and special seating device for sandy wells and to avoid the pump from sanding into the tubing.

Also the P. and T. sand proof pump, which is a plunger cup pump, equipped with adjustable brass sand scraper, also a heavy duty "Miracle" pump.

### TIMKEN ROLLER BEARING CO.
**Booths 72-73, Texas Bldg.**

The Timken Roller Bearing Co., Canton, Ohio, is exhibiting in Booths 72 and 73 in the Texas Building, with John A. Robinson in attendance.

The exhibit features a general display of Timken bearings as used in oil field machinery.

### TITUSVILLE IRON WORKS CO.
**Booth 4, Oklahoma Bldg.**

The Titusville Iron Works Co., Titusville, Pa., is exhibiting in Booth 4 in the Oklahoma Building, with D. F. Kelley in attendance.

The exhibit will feature literature descriptive of the Titusville line of equipment including gas and oil engines and other power machinery.

### TRACKSON CO.
**Outside Space on Grounds**

The Trackson Co., Milwaukee, Wis., is exhibiting in outside space on grounds, with L. E. Dauer and I. W. Kunert in attendance.

The exhibit features two special pipe line crawler-tractors known as Model GI-30 and Model GL. The former is a 30 drawbar horsepower directional speed unit, and the latter has 40 horsepower on the drawbar.

These tractors are equipped with improved load carrying frames, tracks and sprockets. They are designed especially for pipe line service and to provide for actual in-building of operating equipment, such as booms, winches and hoists.

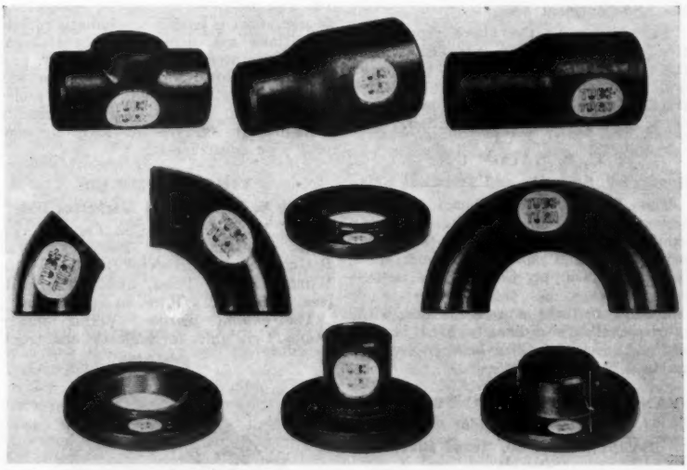
### TRETOLITE CO.
**Webster Groves, Mo.**
**Booth 20, California Bldg.**

### TRIMONT MANUFACTURING CO.
**Gates Hardware Co. Bldg.**
**Outside Space on Grounds**

### TUBE-TURNS, INC.
**Booths 109-110, Oklahoma Bldg.**

Tube-Turns, Inc., 425 South Fifth Street, Louisville, Ky., is exhibiting in Booths 109 and 110 in the Oklahoma building, with R. E. Fritsch, vice president, and J. G. Seiler, sales manager, in attendance.

The exhibit features Tube-Turns



forged steel welding elbows (45 and 90-degree types) and returns (180-degree type) having a uniform wall thickness on the inside and outside arcs. Tube-Turns are made from seamless wrought steel pipe, and are also available in copper, Toncan iron, 18-8, nickel, monel metal. Tube-Turns made of various materials will be displayed in full range of types and in most of the popular sizes. The complete Tube-Turn welding fitting line of elbows, returns, tees, reducers, heads, forged steel flanges, etc., will also be shown.

### TULSA BOILER & MACHINERY CO.
**Block L, on Grounds**

The Tulsa Boiler & Machinery Co., Twenty-first and Union Street, Tulsa, is exhibiting in east half of Block L on grounds, with M. H. Kotzebue, D. E. Fields and S. L. Spence in attendance.

The exhibit features the latest Tulsa Type gasoline plants.

The evaporator is designed for 500 g.p.m. oil circulation and has two internal heating elements, six bubble trays and a mist extractor.

The atmospheric type cooler has straight tubes and as installed in these coolers has no superior in scale shattering. Numerous installations prove this outstanding fact. Taut straight tubes hold the dripping on the under side of the uniform.

The standard multitubular heat exchanger for gasoline plant practice is on display.

A high pressure condenser with floating head and removable tube bundle is also shown. This condenser is of the split ring type which allows the shell to be packed full of tubes.

### TULSA CANVAS PRODUCTS CO.
**Tulsa, Okla.**
**Booth 6, Refiners and Marketers Bldg.**

### TULSA CHAMBER OF COMMERCE
**Booths 20-21, Scientific and Technical Bldg.**

The Tulsa Chamber of Commerce, Tulsa Building, Tulsa, is exhibiting in Booths 20 and 21 in the Scientific and Technical Building, with Reid S. McBeth, oil industry secretary, and other members of Chamber of Commerce staff in attendance.

The exhibit features Tulsa's predominant position as oil headquarters and its meaning to oil equipment manufacturers and suppliers; with other features of Chamber of Commerce program.

### TULSA GEOLOGICAL SOCIETY
**Booth 15, Scientific and Technical Bldg.**

The Tulsa Geological Society, Tulsa, is exhibiting in Booth 15, Scientific and Technical Building, with Ed F. Shea, president; J. B. Leiser, first vice president; K. K. Kimball, second vice president, and T. F. Newman in charge. Others in attendance will be Stanley B. White, Frank R. Clark, W. E. Horkey, J. L. Borden, R. H. Dott and Rex McGehee.

The exhibit features illustrations of the application of geology to problems of the petroleum industry. Cross-sections showing the general stratigraphy of the middle-western states will be on display. A cross-section across the state of Kansas is also presented.

The importance of the careful examination of well cuttings is shown by an organization chart for the paleontological branch of a major oil company. This is accompanied by a series of cross-sections that illustrate instances where accurate knowledge of the stratigraphy was determined solely by the microscopic examination of well cuttings.

The application of the reflection seismograph is illustrated. Two three-dimension models will illustrate the structural geology of portions of Oklahoma.

### TULSA PUBLIC LIBRARY
**Booth 16, Scientific and Technical Bldg.**

The Tulsa Public Library, Technical Department, Tulsa, is exhibiting in Booth 16 in the Scientific and Technical Building, with Miss Florence Lundell in attendance.

The exhibit features a complete petroleum library including books, bulletins and magazines on geology, production, refining and marketing of petroleum. Bibliographies on petroleum subjects of current interest are for distribution and an attendant will be available for assistance in locating desired information.

### TULSA RIG, REEL & MANUFACTURING CO.
**Tulsa, Okla.**
**Booth 28, Texas Bldg.**

### TULSA RUBBER PRODUCTS CO.
**Tulsa, Okla.**
**Booth 54, Texas Bldg.**

### THE UNIVERSITY OF TULSA
**Booths 11-12-13, Scientific and Technical Bldg.**

The University of Tulsa, Tulsa, Okla., is exhibiting in Booths 11, 12 and 13 in the Scientific and Technical Building, with Prof. W. L. Nelson, Dean R. L. Langenheim, Dr. F. T. Gardner, Dr. A. N. Murray, Dr. L. R. Laudon and Dr. S. Born in attendance.

The exhibit is devoted to the application of geology, and particularly paleontology, to the petroleum industry. Charts and fossil specimens will be used to show the relation of fossil deposits to the position of oil sands.

Geophysical instruments will be on display. The method of using these instruments for the detection of oil bearing structures will be demonstrated by the attendant.

### TULSA WINCH MANUFACTURING CO.
**Booth 25, California Bldg.**

The Tulsa Winch Manufacturing Co., 817 East First Street, is exhibiting in Booth 25 in the California Building, with H. L. Pray, M. C. Scott and O. H. Holman in attendance.

The exhibit features truck winches, power takoffs and roller chain.

### TWIN DISC MANUFACTURING CO.
**Booth 73, Oklahoma Bldg.**

The Twin Disc Clutch Co., 1328 Racine Street, Racine, Wis., is exhibiting in Booth 73 in the Oklahoma Building, with G. M. Guilbert, sales manager, and J. B. Jenkins, sales engineer, in attendance.

The exhibit features their line of clutches and power take-off units as follows: Power take-off unit, close coupled duplex clutch, gear reduction unit, and B.F.T. clutch line.

### UNION CARBIDE CO.
**New York City, N. Y.**
**Booths 19, 20, and 21, Texas Bldg.**
With Linde Air Products Co.

### UNION WIRE ROPE CORP
**Booths 80-81-82-129-130-131, Texas Bldg.**

The Union Wire Rope Corp., 3 North Madison Avenue, Tulsa, is exhibiting in Booths 80, 81, 82, 129, 130 and 131 in the Texas Building, with R. H. Bartlett, president; H. R. Gruber, vice president and sales manager; M. G. Ensinger, vice president; J. H. Hatch, treasurer; J. A. Undercofler, Oklahoma salesman; H. E. Frye, Kansas salesman; H. R. Cutlip, Texas salesman; M. B. Hansell, chief electrician in charge of exhibit and Senor Enrique O. Chapa, representative in Mexico.

The Union Wire Rope Corp.'s exhibit is an automatic electric mechanical display built on two tables each 28 by 4 feet, each with a separate train and track system, but so designed that the two

tables can be mechanically and electrically locked so that the larger train from Table No. 1 can pass over the trackage of Table No. 2.

The entire operation of the two trains is automatic, the trains themselves contacting switches and stops to control the trains through semaphores, switches, gates, et cetera.

One train starts at the rope mill on Table No. 1 where three reels of rope are automatically loaded on a flat car, and when the tracks are cleared the train starts on its circuit passing through a village, through numerous tunnels in the mountains, finally climbing up the mountain grades where the logging operations are seen, and where a reel of rope is automatically unloaded. In the nearby hills there is also seen a mining operation, where a second reel of rope is automatically unloaded before the train again comes down onto the plains where the oil fields are located, and where a third reel of rope is automatically unloaded.

While this train makes its circuit, Train No. 2 on a shorter circuit on the second table will complete several round trips. Here will be seen a waterfall feeding a sawmill pond whose overflow continues on in a river spanned by a suspension bridge, and finally emptying into a large lake. The train operation on this table picks up a car of rods, delivers it to the wire mill warehouse, thence completing its circuit to pick up other cars of rods.

This entire exhibit was conceived and built by the mechanical staff of the corporation at the Kansas City plant, and is so made that each table can be disconnected into sections of a maximum length of 6 feet and then easily reassembled.

The entire length of each track system has been carefully estimated and means contrived whereby the number of round trips will be recorded, and you are invited to watch for a future announcement of prizes and conditions for a guessing contest as to the combined number of miles these two trains will travel throughout the official exhibition time of this exposition.

### UNITED AMERICAN BOSCH CORP.

**Springfield, Mass.**

**Booths 35, 36, and 37, Oklahoma Bldg.**

### UNIVERSAL ENGINEERING CO., LTD.

**Booth 115, Texas Bldg.**

The Universal Engineering Co., Ltd., 2369 East Fifty-first Street, Los Angeles, Calif., is exhibiting in Booth 115 in the Texas Building, with Robert R. Robinson in attendance.

The exhibit features the latest models of Zublin bits and interchangeable cutters. Motor-driven cutaway operating models of full-sized Zublin bits will be one of the features of their exhibit.

In addition, the latest types of cutters will be exhibited, including the Type G-62 for drilling and reaming of soft and medium hard sandy or sticky formations; Type H-50 for tough and hard sandy shales; Type K-17 for drilling and reaming extremely hard and abrasive formations, and Type K-99 for milling and sidetracking operations. These new type of cutter are all interchangeable on the same shanks and adapt the Zublin bit to all types of drilling operations.

A unique feature of the exhibit will be test blocks drilled with each of the types of cutters exhibited. These show the motion of digging and reaming teeth of Zublin bits and illustrate their efficient drilling action.

### UNIVERSITY OF OKLAHOMA PETROLEUM ENGINEERING SCHOOL

**Booth 17, Scientific and Technical Bldg.**

The College of Engineering, School of Petroleum Engineering, University of Oklahoma, Norman, Okla., is exhibiting in Booth No. 17 in the Scientific and Technical Building with W. H. Carson, W. F. Cloud, R. L. Huntington and I. F. Bingham in attendance.

The exhibit features still photographs and motion pictures showing students at work in field and laboratory.

### UNIVERSITY OF OKLAHOMA GEOLOGICAL DEPT.

**Booths 18-19 Scientific and Technical Bldg.**

The Oklahoma State University, Norman, Okla., is exhibiting in Booths No. 18-19 in the Scientific Building with Miss Mary Haller, graduate student in geology at O. U. in attendance.

The exhibit features labeled fossils, rock specimens showing various oil-producing sands of Oklahoma, outcrop samples of Oklahoma formations.

Economic products of Oklahoma, graphic well logs of cement and Oklahoma City oil fields, maps and charts. Special exhibits of unusual interest.

### U. S. BUREAU OF MINES

**Booths 50-51-52-53, Scientific and Technical Bldg.**

The U. S. Bureau of Mines, Bartlesville Okla., is exhibiting in Booths 50, 51, 52 and 53 in the Scientific and Technical Building, with C. R. Bopp, Peter Grandone and C. J. Wilhelm in attendance.

The exhibit features an important study of the Bureau of Mines during the past year relating to the determination of subsurface conditions, and particularly to the condition of the oil and gas as it exists in the structure. A major factor in these studies is the procurement of bottom hole samples of oil at the pressure and temperature at which the oil exists underground. The Bureau of Mines will display the apparatus used to obtain bottom hole samples and laboratory equipment used in determining the shrinkage due to the liberation of dissolved gas, and in addition will conduct some of these experiments during the progress of the exposition.

In connection with obtaining bottom hole samples of crude oil, the bottom hole pressures and temperatures are of utmost importance. In the Bureau booth there will be on exhibit various types of the bottom hole pressure gauges used in the Mid-Continent area.

In addition to the above representative samples of crude petroleum from the major producing fields of the world will be displayed and also a life sized working model showing the proper method of giving artificial respiration.

### U. S. GAUGE CO.

**Booths 8-9, Scientific and Technical Bldg.**

The United States Gauge Co., 44 Beaver Street, New York, N. Y., is exhibiting in Booths 8 and 9 in the Scientific and Technical Building, with the Refinery Supply Co. of Tulsa, representatives.

Exhibit features a gauge board with gauges that are ordinarily used in the oil field, many of them being especially designed for this service.

### VAN DERN ELECTRIC TOOL CO.

**Cleveland, Ohio**

**Booths 29 and 30, Texas Bldg.**

### VAPOR RECOVERY SYSTEMS CO.

**Booth 63 Scientific and Technical Bldg.**

The Vapor Recovery Systems Co., 2820 North Alameda Street, Compton, Calif., is exhibiting in Booth 63 in the Scientific and Technical Building, with Frank V. Long in attendance.

The exhibit features "Varec" pure aluminum, Underwriters' Laboratories listed conservation tank vent units with the only flame arrestor which is listed for installation between vent valve and tank. Also exhibiting for the first time the "Varec" telescopic flame arrestor bank (pat. pending).

Inclosed tank winch, cable bracket, swing joint without packing joint, aluminum alloy gauge hole covers, manheads and covers, manometers, combination vent valve and gauge hatch, and vapor recovery regulator.

### J. A. VAUGHAN MANUFACTURING CO.

**Booth 10, Arcade**

The J. A. Vaughan Manufacturing Co., Tulsa, is exhibiting in Booth 10 in the Arcade, with J. A. Vaughan, J. W. Patterson and J. H. James in attendance.

The exhibit features the Vaughan continuous sprayer which is on display and demonstrated. This sprayer is of entirely new design and embodies many features heretofore not found in equipment used for this purpose. Its operation is continuous and it does not drip, does not require adjustment and atomizes every particle of fluid that is sprayed.

### THE VELLUMOID CO.

**Booth 132, Oklahoma Bldg.**

The Vellumoid Co., 54 Rockdale Street, Worcester, Mass., is exhibiting in Booth 132 in the Oklahoma Building, with Charles S. Livingstone, sales manager, and George H. Sinnott, sales representative, in attendance.

The exhibit features Vellumoid sheet packing, a soft fiber sheet made especially for work with oil and gasoline.

Display will include gaskets illustrating the variety of shapes and sizes supplied from Vellumoid packing, also features demonstrating the strength and oil-proof qualities of the material, a fiber packing that will stand up indefinitely under oil service without any deterioration whatever.

### VICTAULIC CO. OF AMERICA

**Booths 101-110 Texas Bldg.**

The Victaulic Co. of America, 26 Broadway, New York, N. Y., is exhibiting in Booths 101 and 110 in the Texas Building, with W. B. Damsel, vice president and general manager, and R. W. English, special representative, in attendance.

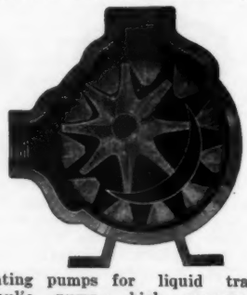
The exhibit features a complete line of Victaulic pipe couplings and fittings, including a new and supplementary line of couplings manufactured of Victalloy forged steel. Victaulic malleable iron couplings have played an important role in the development of world oil fields and a new line of forged couplings is designed to accommodate high pressures or unusually severe laying conditions. Motor driven models assimilating field conditions will demonstrate several exclusive features, including flexibility, provision for contraction and expansion, etc. These moving models will operate under pressure and the observer will readily visualize the features of Victaulic coupled pipe construction.

### VIKING PUMP CO.

**Booth 8, Refiners and Marketers Bldg.**

The Viking Pump Co., Cedar Falls, Iowa, is exhibiting in Booth 8 in the Refiners and Marketers Building, with Warner Lewis, Tulsa, and C. F. Mullens, Cedar Falls, Iowa, in attendance.

The exhibit features Viking rotary pumps, twin units for bulk stations, truck



mounting pumps for liquid transfer, hydraulic pumps high pressure oil service, Simplex tank gauge for liquid measurement and Viking pumps for handling acids in treating wells, and pumps specially constructed for use as mud pumps on portable drilling unit for seismograph work.

### B. W. VINSON CO.

**Booth 77, Texas Bldg.**

The American Arch Co., Inc., 60 East Forty-second Street, New York City, New York, is exhibiting in Booth No. 77 in the Texas Building with B. W. Vinson (B. W. Vinson Co., Inc., Mid-Continent representative), in attendance.

The exhibit features a full-sized section of an American single tile wall. This wall is a unit-supported refractory wall used for furnace construction in connection with both boilers and stills. The walls may be either air-cooled or insulated. Each tile is unit-supported and is free to expand and contract. It is supported from castings bolted to the buck stays.

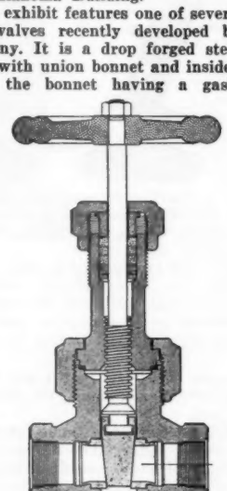
We will also show the American Arch Co.'s insulated flat arch, which is extensively used in oil still furnace construction.

### HENRY VOGT MACHINE CO.

**Booth 59, Oklahoma Bldg.**

The Henry Vogt Machine Co., Louisville, Ky., is exhibiting in Booth 59 in the Oklahoma Building.

The exhibit features one of several new type valves recently developed by this company. It is a drop forged steel gate valve with union bonnet and inside screw stem, the bonnet having a gasket or



ground joint as desired. The seats are rolled in and may be easily removed while the wedge is solid.

These valves are available in sizes from one-quarter to 2 inches. They are designed for oil or steam service up to 600 pounds at 800° F. or nonshock cold working pressure up to 1,500 pounds and may be repacked while under pressure. They are provided with steel, stainless steel, Nitralloy and Monel metal trimmings to suit the intended service.

### VOL-U-METER CO., INC.

**Booth 9, Refiners and Marketers Bldg.**

The Vol-U-Meter Co., Inc., 710 Ohio Street, Buffalo, N. Y., is exhibiting in Booth 9 in the Refiners and Marketers Building, with E. L. Marble and R. W. Wetzel in attendance.

The exhibit features the Vol-U-Meter Jr., a direct pressure filling machine so designed that several units can be built up into a large compact filling machine which will operate on roller conveyor line.

The Bruno can filler, a controlled pressure can filling machine made in single or double units for roller or belt conveyor line.

Model No. 50 pressure filler, a power driven machine for filling open top cans by an entirely new method. The liquid is forced into the can by pressure pump and a vacuum pump brings the liquid to the same level in all cans. Movement of filling head and control are operated by foot pedal, leaving the operator's hands free to manipulate the filled and empty containers. This machine is new and it is different. It is fast, accurate, and very reasonably priced.

The Model No. 75 grease filling machine, a motor driven machine using the worm principle, for filling heavy greases or other slow moving materials into open top containers. The material is forced, by a worm, through an automatically controlled valve into the container mounted on a scale platform. When the proper weight of the material has passed into

the container the scale platform drops and closes the valve. This machine can be operated on a belt or roller conveyor line.

### VORTEX MANUFACTURING CO.
**Claremont, Calif.**
**Booth 15, California Bldg.**

### WACKMAN WELDED WARE CO.
**Booth 42, Refiners and Marketers Bldg.**

The Wackman Welded Ware Co., Seventh and Victor Streets, St. Louis, Mo., is exhibiting in Booth 42, Refiners and Marketers Building with George Wood, assistant to the president; A. F. Cunningham, manager of drum sales; E. A. King, Kansas City, Mo., plant manager, and L. F. McKay, division manager, Tulsa, in attendance.

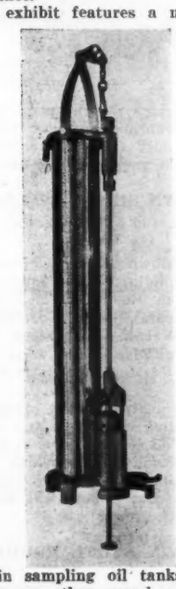
This exhibit features light oil barrels and grease drums of standard sizes and styles. Also a new product known as Wackman "Rim Seal" full removable head barrel. This barrel is designed for the shipment of solids, semisolids and liquids and is tamper, shock and leakproof.

55-gallon No. 18 gauge I. C. C. 5E, decorated oil drum, 55-gallon No. 18 gauge multiple swedge decorated oil drum, 55-gallon No. 18 gauge decorated, new Wackman "Rim Seal" full removable head barrel, 30-gallon No. 19 gauge multiple swedge decorated oil drum, 15-gallon No. 19 plain style painted oil drum, 5-gallon painted motor oil delivery can, 10-gallon hot dipped galvanized motor oil delivery can, lithographed barrel heads and Wackman 2-gallon type galvanized embossed pouring funnel.

### W. L. WALKER CO., INC.
**Booth 43, Oklahoma Bldg.**

The W. L. Walker Co., Inc., Tulsa, is exhibiting in Booth 43 in the Oklahoma Building, with W. L. Walker in attendance.

The exhibit features a new oil thief



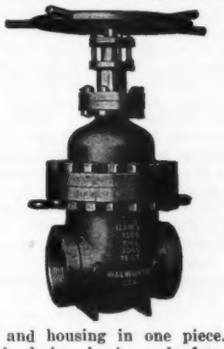
used in sampling oil tanks, tank cars, tankers or other vessels containing or carrying oil or its products.

### WALWORTH CO.
**Booths 104-107 Oklahoma Bldg.**

The Walworth Co., 60 East Forty-second Street, New York City, N. Y.. is exhibiting in Booths No. 104 and 107 in the Oklahoma Building with R. S. Witherell, W. H. Weber, M. C. Jacobs, C. L. Bradbury, W. M. Combs, F. H. Morehead and F. W. Duemler in attendance.

The exhibit features the following material: Steel-iron and Sigma steel lubricated plug valves, Sigma steel drilling and flow line gate valves, Christmas tree hookups and a complete line of quality bronze gate and globe valves, Walworth C. N. I. alloy pipe, cast iron threaded pipe and ni-resist pipe.

Also the Walco pipe wrench which was designed particularly for the rough treatment given tools in the oil country. It is made of all drop-forged steel with



handle and housing in one piece. It is simple in design, having only four parts.

Walworth lubricated plug valves will be exhibited with gate valve face to face dimensions a feature which makes them interchangeable with gate valves without piping changes.

Another feature in our line of valves will be the Walworth bar stock valves made in carbon steel and stainless steel, designed for controlling gas, gasoline, oil, air or any liquid gaseous vapor.

### WALLACE, MULLER & CO., LTD.
**Booths 43-44, Refiners and Marketers Bldg.**

The Wallace, Muller & Co., Ltd., 75 West Street, New York, N. Y., is exhibiting in Booths No. 43 and 44 in the Refiners and Marketers Building with Mr. Wallace and Mr. Partiot in attendance.

The exhibit features the Automixer, a machine which blends lubricating oils at normal temperatures, without the application of heat.

### WAUKESHA MOTOR CO.
**Booths 89, 90, 121 and 122, Oklahoma Bldg., and Open Space on Grounds**

The Waukesha Motor Co., Waukesha, Wis., is exhibiting in Booths 89, 90, 121 and 122 in the Oklahoma Building, and in open space opposite entrance to Oklahoma Building, with J. E. DeLong, Arch F. Campbell, R. M. Schaefer, and M. E. Nicklin in attendance.

The exhibit features a 6-cylinder oil engine rated at 180 horsepower. This engine is built under the Hesselman patents using solid injection for fuel feed and high tension magneto for ignition. The engine is not of the semi-Diesel type.

A large drilling engine rated at more than 300 horsepower and equipped with a new type of water cooled exhaust manifold and safety explosion-proof features. This engine is in operation.

A 300-horsepower gas engine is also shown together with a steam engine.

Another feature of this exhibit is a CFR fuel testing unit for Diesel fuels and a new type cooling system for large oil field drilling engines.

A small gas engine for pumping is also in the booth.

The explosion-proof power unit with the water cooled manifold and complete ignition protection will also be exhibited. These are built in sizes up to 75 horsepower for pumping and auxiliary duty in the oil fields.

### WEBSTER ENGINEERING CO.
**Booths 22-23, Oklahoma Bldg.**

Webster Engineering Co., 419 West Second Street, Tulsa, is exhibiting in Booths 22 and 23 in the Oklahoma Building, with Walter Combs, L. S. Reagan, Carl W. Gibson and O. F. Kluenter in attendance.

The exhibit features No. 400 Webster hi-pressure combination gas and oil burner, Webster radiant gas burners, No. 700 series regenerative gas burner, Weco precision combustion control, draft compensating type, Wilgus regulators, Series 1,100, Series 1,300 and Series 1,400 oil burners and No. 500 oil field burner.

### WEDGE PROTECTORS, INC.
**Booth 102, Oklahoma Bldg.**

The Wedge Protectors, Inc., 3599 East Eighty-second Street, Cleveland, Ohio, is exhibiting in Booth 102, Oklahoma Building with the Champion Rivit Co.

This exhibit features a pipe thread protector of rugged design and makes

use of a three-point locking feature that prevents the protector from being shaken off in transit.

It is designed so as to clear both crown and root of the threads, thus preventing the damage to pipe threads either during application or removal of the protector. The protector fits the pipe snugly and consequently permits stacking with a minimum of lost storage space. Complete drainage of water from the threads of the pipe is obtained by means of eight drain holes located in the crown area of the protector.

### WELDERS SUPPLY CO.
**Outside Space.**

The Welders Supply Co., Tulsa, Oklahoma City and Dallas, Tex., is exhibiting in the outside space with H. A. Webb and B. Beatty in attendance.

The exhibit features new ideas in portable arc-welding units, cutting with petroleum gases, atomic hydrogen welding and a complete line of General Electric welding units.

### WESTCOTT & GREIS, INC.
**Booths 41-42-43, Scientific and Technical Bldg.**

The Westcott & Greis, Inc., Tulsa, Okla., is exhibiting in Booths 41-42-43 in the Scientific and Technical Building with J. H. Satterwhite, C. C. Clover, H. W. Wahl, R. Barton, George C. Davis and Mr. Hachmester in attendance.

The exhibit features orifice and positive meters, manufactured by Metric Metal Works, of American Meter Co., Erie, Penn., showing their new forged steel orifice meter and integrating orifice meters and volume and pressure controls manufactured by them.

Their house type and large capacity positive meters together with the new direct reading index and base pressure index which integrates the pressure multipliers on high pressure conditions.

Regulators manufactured by The Reliance Manufacturing Co., of Alhambra, Calif., showing their house type regulators which have been considerably improved, and also their new single valve large volume high and low pressure regulators, which is a radical departure in this type of valve.

Regulators manufactured by Davis Regulator Co., of Chicago, showing their various new design gas and steam regulators, both pilot control and pressure control, and also their new patented soft seated valves for tight shutoff.

Gauges and relief valves of Crosby Steam Gage & Valve Co., showing their nozzle type, high capacity relief valves and general line of gauges.

The new Dunn-Lewis combined orifice and gate valves, which have many features that are original, and filling a long felt want for a valve that can be easily repaired and operated on the job.

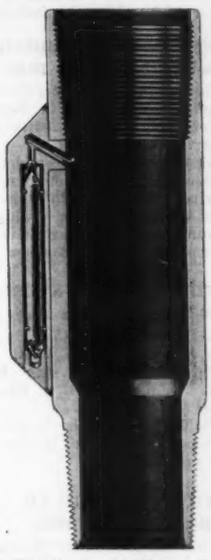
### WESTCOTT VALVE CO.
**Booths 9-10, Continental Supply Co. Bldg.**

The Westcott Valve Co., East St. Louis, Ill., is exhibiting in Booths 9 and 10 in the Continental Supply Co. Building, with A. V. Wadsworth, vice president and W. C. Wadsworth, Tulsa, representative, in attendance.

The exhibit features gate valves, hookups and Christmas tree specialties.

### WESTERN PNEUMATIC CO.
**Booth 9, Arcade Bldg.**

The Western Pneumatic Co., 2121 Alamo National Building, San Antonio, Tex., is exhibiting in Booth 9 in the



Arcade Building, with James W. Taylor and S. W. Blount in attendance.

The exhibit features pneumatic flow valves for kicking off and continuous or intermittent flow of oil wells.

### WESTINGHOUSE ELECTRIC & MANUFACTURING CO.
**Booths 91-92-119-120, Oklahoma Bldg.**

The Westinghouse Electric & Manufacturing Co., of East Pittsburgh, Pa., is exhibiting in Booths 91, 92, 119 and 120 in the Oklahoma Building, with G. E. Stoltz, Jack Swindell, L. D. O'Connell, D. H. Hunter, R. F. Riddle, R. T. Woodruff, W. C. Dreyer, L. W. McLeod and F. E. O'Meara in attendance.

The exhibit features pumping equipment, consisting of gear unit, motor, combination limestarter; two models of heat exchangers; explosion tested motors; industrial analyzers; water coolers; a breath relay; lighting equipment and other apparatus.

The pumping unit consists of rigid mounting gear unit equipped with heat treated helical gears and roller bearings which assure a minimum friction loss and permanent alignment.

Two models of heat exchangers, embodying the latest development in the refining field. A 75 horsepower explosion resisting squirrel cage motor shows the advantages of construction and operation of the class of refinery equipment.

The portable a.c. testing set known as the industrial analyzer is suitable for testing industrial apparatus and motors and is a miniature portable three-phase switchboard panel in a carrying case complete with all necessary switching equipment, transformers and resistors.

### WHEATLEY BROTHERS
**Block F, on Grounds**

The Wheatley Brothers, Tulsa, is exhibiting on Block F on the grounds with Tom Wheatley, Frank Wheatley and Merle Hampton in attendance.

The exhibit features a 4 by 6-inch pump direct driven by a Waukesha oil engine.

Also bronze and aluminum castings, rings, pistons, flanges, gate valves and check valves.

### WHEELING CORRUGATING CO.

**Booth 49, Refiners and Marketers Bldg.**

The Wheeling Corrugating Co., Steel Shipping Container Division, Wheeling, W. Va., is exhibiting in Booth 49 in the Refiners and Marketers Building, with W. Hayes Sims, R. I. Schuppener, manager of sales; Theo. Humphrey, assistant manager of sales, and J. E. Boddy, assistant to sales manager, in attendance.

The exhibit features reversible spout pail, full open top containers, pitcher spout pail, clamp ring closures, lithographed containers and drums. Also motion pictures showing manufacture.

### WHITNEY MANUFACTURING CO.

**Booth 25, California Bldg.**

The Whitney Manufacturing Co., Hartford, Conn., is exhibiting in Booth 25 in the California Building, with O. H. Holman in attendance.

The exhibit features a complete line of roller and silent chains and especially features a new type antiwhip chain which practically eliminates the "whip" in chains running on pulsating drives and greatly increases chain efficiency.

### WICKWIRE SPENCER STEEL CO.

**Booth 31, California Bldg.**

The Wickwire Spencer Steel Co., New York City, is exhibiting in Booth 31 in the California Building, with R. H. Cherry, R. J. Jones and O. C. Elliott in attendance.

The exhibit features the largest reel of wire rope ever shown in the Mid-Continent area.

### WICO ELECTRIC CO.

**Booth 18, Texas Bldg.**

The Wico Electric Co., Springfield, Mass., is exhibiting in Booth 18 in the Texas Building, with L. F. Smith, Tulsa; Glenn Hendrickson, Harry Lolley, W. L. Kaiser, and V. K. Hunt in attendance.

This exhibit features the complete Wico line of ignitors to take care of engines from the very smallest to the very largest in any number of cylinders.

### GUSTAV WIEDEKE CO.

**Dayton, Ohio**

**Booths 29 and 30, Texas Bldg.**

### JOHN H. WIGGINS CO.

**Booth 125, Texas Bldg.**

The John H. Wiggins Co., 16 West Fifteenth Street, is exhibiting in Booth No. 125 in the Texas Building with J. H. Wiggins and D. A. Leach in attendance.

The exhibit features a new type of structure which is called a steel balloon. It is a gasholder and is used in the oil industry either as an ordinary gasholder or in connection with collecting the vapors off of oil and gasoline tanks to make a vapor-saving system.

### WILCOX, H. F., OIL & GAS CO.

**Booth 21, Refiners and Marketers Bldg.**

The H. F. Wilcox Oil & Gas Co., Tulsa, Okla., is exhibiting in Booth No. 21 in the Marketers and Refiners Building with L. G. Murrell and C. M. Cocanougher in attendance.

The exhibit features the latest equipment for dispensing canned oils, etc., as well as high points of interest in manufacturing greases.

### WILLARD STORAGE BATTERY CO.

**Booth 34, California Bldg.**

The Willard Storage Battery Co., 246 East 131st Street, Cleveland, Ohio, is exhibiting in Booth No. 34 in the California Building with H. H. Ellis, J. R. Carlisle, P. F. Jones, C. F. Hodges and E. M. Sutherland in attendance.

The exhibit features a comprehensive display of storage batteries that are applicable to various phases of the oil industry. There will be starting and lighting batteries for automobile and truck engines, also for Diesel engines. There will also be a display of various types of batteries that are used for isolated lighting plants where electric lighting is used in drilling operations and other similar applications.

We will also display a rather complete line of batteries suitable for communication in both telephone and telegraph. These batteries may also be used for operating signals of various kinds such as bells and annunciators.

In addition we will display Willard's most recent development which makes possible the use of lead acid storage batteries as a source of power in circuits where the current requirements are low and the discharge extends over long periods of time. These types are well adapted for use in radio, communication, fire, burglar and police alarms, laboratory use, warning signals and other similar applications or may be used as a source of power in any field where the current demand is low or where dry or primary cells have been previously used.

### WILLIAMETTE-ERSTED CO.

**Portland, Ore.**

**Outside Space on Grounds**

### WILLIAMS BROTHERS WELL TREATING CORP.

**Booth 55, Scientific and Technical Bldg.**

The Williams Brothers Well Treating Corp., 425 National Bank of Tulsa Building, is exhibiting in Booth No. 55 in the Scientific and Technical Building with George A. Peterkin, Harry F. Wright, James O. Lewis, Jack A. Porter and Roy L. Ginter in attendance.

The exhibit features plats, charts and specimens showing results of acid treatment of oil wells.

Wright well-pressure gauge, for measurement of bottom-hole pressures.

### J. H. WILLIAMS & CO.

**Booth 74, Texas Bldg.**

J. H. Williams & Co., 400 Vulcan Street, Buffalo, N. Y., is exhibiting in Booth 74 in the Texas Building, with Walter M. Silliman in attendance.

The exhibit features drop-forged wrenches, carbon steel, six patterns; "Superrenches," chrome-alloy steel, six patterns. Detachable socket wrenches, "Supersocket" sets, four assortments. Chain pipe tongs, "Vulcan," "Vulcan Boll-Weevil" reversible action; "Vulcan Superior," for pipe and fittings. Also chain pipe vises, "Vulcan," and "Vulcan Superior" with adjustment on top and reversible jaws.

There will be on display in the booth the "Boll-Weevil" tongs showing mechanical and operating features as in actual service. A model arm handles the pipe tongs exactly as they would be handled by an operator. The teeth engage the pipe section and rotate it through the power applied to the tong handle. Windows in the board display cards explaining each operation.

### WILSON & BENNETT MANUFACTURING CO.

**Booth 39, Refiners and Marketers Bldg.**

The Wilson & Bennett Manufacturing Co., 6532 South Menard Avenue, is exhibiting in Booth No. 39 in the Refiners and Marketers Building with H. LePan, J. P. Moran and H. R. Rogers in attendance.

The exhibit features representative samples of the various styles and types of steel barrels, drums, and pails of from one to 65-gallon capacity, and in all practical styles to meet almost every packaging requirement.

We will display containers for various quantities of grease and also oil containers, pails and drums. Then our exhibit will clearly show the possibilities of decorating steel containers. We will have on display samples of the containers that we have made for practically all of the major oil companies, as well as some other representative containers for various products such as paints and soap.

We will emphasize to some extent our Swivel Spout Por-Pails used extensively for the marketing of oil in 5-gallon units. This Por-Pail has a patented pouring spout that is particularly attractive to the oil user.

Another container we will display will be our E-Z Seal barrel with full removable head. There is a patented sealing ring which makes positive leak-proof closure. This container is especially adaptable to the shipment of grease and petrolatum.

### WILSON MANUFACTURING CO.

**Outside Space on Grounds**

The Wilson Manufacturing Co., Wichita Falls, Tex., is exhibiting in outside space on grounds, with Bert Ligon, Harry F. Hinish and J. H. Wilson in attendance.

The exhibit features a new winch on 35 Caterpillar tractor.

### WILSON WELDER & METALS CO.

**New York City, N. Y.**

**Booth 34, Oklahoma Bldg.**

With Air Reduction Sales Co.

### WOOSTER BRUSH CO.

**Wooster, Ohio**

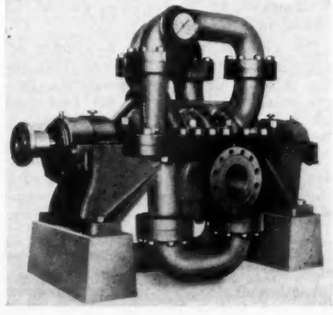
**Outside Space on Grounds**

### WORTHINGTON MACHINERY CORP.

**Block L, on Grounds**

The Worthington Machinery Corp., Harrison, N. J., is exhibiting on Block L on grounds with J. A. Lupfer, Tulsa, in attendance.

The exhibit features gas turbine driven distillation pump units; pipe line pick-up units; portable field pumps; gas engines, Type BG-2 and a new 40 horsepower gas and Diesel engine, also a new type AG vertical gas engine; single-stage centrifugal pump; pipe line centrifugal pumps, side pot type simplex pump, vertical angle air compressor, Hivol piston pumps, rotary pumps, Monobloc centrifugal pumps and air compressor units.



Over 90 per cent of the exhibits of the Worthington Machinery Corp. are new developments since the last exposition and all equipment shown is carried in stock in Tulsa warehouse for immediate delivery.

### YALE & TOWNE MANUFACTURING CO.

**Stamford, Conn.**

**Outside Space on Grounds**

### YARNALL-WARING CO.

**Booth 28, Scientific and Technical Bldg.**

The Yarnall-Waring Co., Philadelphia, Pa., is exhibiting in Booth 28 in the Scientific and Technical Building, with B. G. Waring, S. D. Barr, T. L. Moore, and Mr. Kildare in attendance.

The exhibit features Yarway seatless and double tightening blowoff valves of the types used in oil refinery power plants for production and drilling boilers. The seatless type Yarway valve is also used for oil well drilling and mud pumps. The exhibit shows these valves in section and includes samples of the hollow plunger and the special packing rings developed for Yarway seatless valves.

The Yarway double tightening valve is of the lever-operated rotating disc design with the unique feature of sealing bushing on inlet side.

Yarway seatless valves are made on both straightaway and angle types and are frequently used in tandem with Yarway double tightening valves. The sample plunger shown is made of Nitralloy and the packing rings are of special laminated construction.

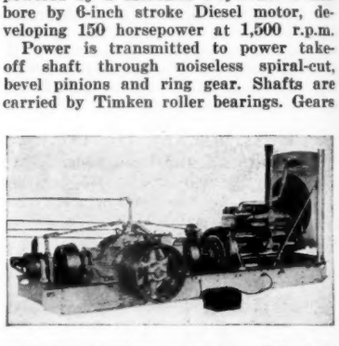
### YOUNG ENGINE CORP.

**Block A, on Grounds**

The Young Engine Corp., Canton, Ohio, is exhibiting in Block A, adjacent to the Texas Building, with W. T. Young and P. J. Dasey in attendance.

The exhibit features the Young Engine Corp., Canton, Ohio, Model 140-DRB Diesel drilling engine, which is a complete unit on a rigid steel frame, adapted for either cable or rotary drilling. It is powered by a Hercules 6-cylinder 5-inch bore by 6-inch stroke Diesel motor, developing 150 horsepower at 1,500 r.p.m.

Power is transmitted to power take-off shaft through noiseless spiral-cut, bevel pinions and ring gear. Shafts are carried by Timken roller bearings. Gears and shaft bearings run in an oil bath in a dustproof transmission case. Clutches are of heavy-duty type. Power take-off shaft is at right angle to center of engine.



### YOUNGSTOWN SHEET & TUBE CO.

**Booths 1, 2, 3, and 4, Continental Supply Co. Bldg.**

The Youngstown Sheet & Tube Co., Stambaugh Building, Youngstown, Ohio, is exhibiting in Booths 1, 2, 3, and 4 in the Continental Supply Co. Building, with W. E. Watson, J. C. Siegle, O. C. Cox, H. B. Duffield, E. P. Corey, G. W. Christopher, and M. S. Curtis in attendance.

The exhibit features an unusual display of threading equipment and testing apparatus for oil country pipe. A feature of the exhibit will be a working model of a pipe mill. The new Youngstown Petro Handle Bar union will also be featured.

### YOUNGSTOWN STEEL PRODUCTS CO.

**Booth 8, Continental Supply Co. Bldg.**

The Youngstown Steel Products Co., Youngstown, Ohio, is exhibiting in Booth 8 in the Continental Supply Co. Building, with Ora C. Cox, manager of Union Sales, in attendance.

The exhibit features Youngstown Hydro and Youngstown Petro unions, also the New Petro Handle Bar union.

### ZERO HOUR BOMB CO.

**Booth 42, Oklahoma Bldg.**

The Zero Hour Bomb Co., 617 Wright Building, Tulsa, is exhibiting in Booth 42 in the Oklahoma Building, with H. A. Jenkins, W. F. Bleecker, W. J. Cheley, Pearl Blair, and C. E. Warner in attendance.

The exhibit features an enlarged wooden sectional model Zero Hour Electric Bomb showing details of parts, construction and operation, and flanked on

either side by stock samples of the five different types of Zero Hour Bombs.

In this model, a motor driven mechanism rotates the watch hands and flashes a light each time the hour hand reaches the "Zero Hour" point on the watch dial, the light appearing in the explosive container section to indicate an explosion.

Also a sample nitroglycerin shell, Zero Hour Bombs and Zero Hour Umbrella Bridge, all hooked together and suspended on a torpedo hook and line, shows how this equipment is arranged for placement in a well to be shot.

**JOHN ZINK CO.**
**Outside Space on Grounds**

The John Zink Co., Tulsa, is exhibiting on outside space on grounds, with John Zink in attendance.

The exhibit features short flame burners for cracking stills, special short flame burners for gasoline plant burners; new drilling boiler burners; new acid sldge burner; domestic furnace burner; and straightening vanes. A small furnace will be operating to show the short flame burner and demonstrate the length of the flame produced.

**ZIPPER PULLING MACHINE CO.**
**Block H, on Grounds**

The Zipper Pulling Machine Co., P. O. Box 1582, Wichita, Kans., is exhibiting in Block H, on grounds, with A. Lea Keltner, W. B. Wallace, Frank Chacon, C. E. Folmnsbee, and Mrs. J. F. Dietrich in attendance.

The exhibit features Keltner Zipper pulling units for servicing and cleaning out oil wells, in three sizes and five models to accommodate all depths and conditions. The "Junior Model," a shallow well machine, and the Model "A" standard duty are powered with Ford or Chevrolet motors and the Model "B" heavy duty unit uses any motor desired up to 75 horsepower.

The Model "B" heavy duty unit is equipped with 36"x4" internal emergency brakes, an innovation in oil field equipment, in addition to the regular 40"x6" self-energizing external brakes which work on an eccentric type equalizer, producing a total effective brake area of 1,965 square inches.

## Supplemental List of Exhibitors

**AMERICAN SHEET & TIN PLATE CO.**
Pittsburgh, Pa.
Booth 116, Oklahoma Bldg.

**AMERICAN STEEL & WIRE CO.**
Chicago, Ill.
Booth 116, Oklahoma Bldg.

**ARMITE LABORATORIES**
Los Angeles, Calif.
Lot L, on Grounds
With Worthington Machine Co.

**CANNADY OTTO MANUFACTURING CO.**
Chicago, Ill.
Booths 3, 4, and 5, Arcade Bldg.

**CARNEGIE STEEL CO.**
Pittsburgh, Pa.
Booth 116, Oklahoma Bldg.

**CAVINS CLEAN-OUT SERVICE**
**Block J, on Grounds**

The Cavins Clean-Out Service, 1616 Southeast Twenty-ninth Street, Oklahoma City, Okla., is exhibiting in Block J on the grounds, with A. L. Harper and J. W. Foltz in attendance.

The exhibit features a complete set of Cavins clean-out tools, 4¾-inch size and 3½-inch size. Formations that produce oil gathered from nearly all Mid-Continent fields.

**CONTINENTAL MOTORS CORP.**
Detroit, Mich.
Booths 106 and 107, Texas Bldg.

**DANIEL WOODHEAD CO.**
Chicago, Ill.
Booths 32 and 33, California Bldg.

**DOHENY STONE DRILL CO.**
Los Angeles, Calif.
Booths 57 and 58, California Bldg.

**E. E. EDWARDS WIRE ROPE CO.**
San Francisco, Calif.
Booths 51 and 52, California Bldg.

**INTERNATIONAL EQUIPMENT CO.**
Boston, Mass.
Booth 44, California Bldg.
With W. H. Curtin Co., Inc.

**LONGVIEW CHAMBER OF COMMERCE**
Longview, Tex.
Booth 38, California Bldg.

**LUBO METER CO.**
Chicago, Ill.
Booth 61, California Bldg.

**MacCLATCHIE MANUFACTURING CO.**
Compton, Calif.
Booth 12, Arcade Bldg.

**MINNEAPOLIS MOLINE POWER IMPLEMENT CO.**
Minneapolis, Minn.
Outside Space on Grounds

**MURRAY TOOL & SUPPLY CO.**
Tulsa, Okla.
Booths 57 and 58, California Bldg.

**NATIONAL TUBE CO.**
Pittsburgh, Pa.
Booth 116, Oklahoma Bldg.

**PACKING ENGINEERING CORP.**
Cranford, N. J.
Lot L, on Grounds
With Worthington Machine Co.

**PENNSYLVANIA TRANSFORMER CO.**
Pittsburgh, Pa.
Lot G, on Grounds
With Max Landry.

**PYOTT FOUNDRY & MACHINE CO.**
Chicago, Ill.
Lot G, on Grounds

**REEVES PULLEY CO.**
Columbus, Ind.
Lot G, on Grounds

**SIMONDS SAW & STEEL CO.**
Fitchburg, Mass.
Booths 3, 4, and 5, Arcade Bldg.
With Machine Tool & Supply Co.

**STANLEY RULE & LEVEL WORKS**
New Britain, Conn.
Booths 3, 4, and 5, Arcade Bldg.

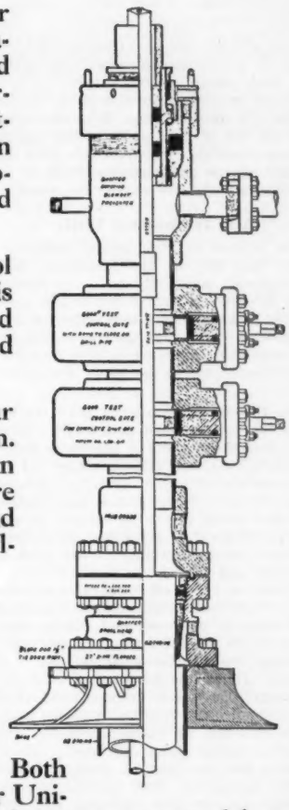
**STEEL & TUBES, INC.**
Cleveland, Ohio
Booths 17, 18, 19, 20, 21, and 22, California Bldg.

**TRADE PRESS BUREAU**
Kansas City, Mo.
Lot F, on Grounds

**TERRY STEAM TURBINE CO.**
Hartford, Conn.
Lot L, on Grounds
With Worthington Machine Co.

(Continued on Page 122)


# Shaffer High Pressure Drilling Hook Up



This high-pressure cellar assembly, with its combination of casing heads, mud cross, control gates, overflow vent, blow-out preventer and capping connection for bringing in the well, provides both emergency and permanent protection.

Flanged onto the Spool type heads at the bottom is a Shaffer high-pressure mud cross with four-inch and two-inch outlets.

A pair of Shaffer Cellar Control Gates are shown. One provides protection "out of the hole" when there is no drill-pipe present and replaces the old style drilling valve.

The upper gate is similar, with the same advantages of compactness, ability to close against leaks and operate under pressure, giving dependable protection "in the hole." Both gates are used with Shaffer Universal joint connections, giving remote control from any place outside the derrick.

Above the gates is installed a blowout preventer with the Shaffer Rotating Packing Assembly. This assembly packs off and revolves with the Kelly, thus giving protection while drilling. When pulling drill pipe or the stationary packing assembly may be used in connection with the gates.

The Warren Head flanged Christmas-tree cap may be used as another safety feature of this hook-up.

Below the mudcross the cut shows our Spool Type Landing Heads. This demonstrates how conveniently the whole high pressure hook-up may be installed.

*Consult Us About Your High Pressure Problems.*

We Manufacture a Complete Line of Casing Heads, Tubing Heads and Flow Beans.

*Write For Our 1934 Catalogue.*

## Shaffer Tool Works

BREA CALIFORNIA

MID-CONTINENT—Shaffer Tool Works, Houston, Texas.
ROCKY MOUNTAINS—Great Northern Tool and Supply Co., Billings, Montana.
FOREIGN—Oil Well Supply Co.

# Recent Developments in Production Equipment and Methods Made During the Past Year

By T. W. RHOADS[1] and J. M. COOPER[2]

In a general review of recent developments in production equipment and methods, each phase of the subject may of necessity be given only a brief discussion within the allotted time. Acid treatment of wells merits first place in the outline of improvements in production methods, because of the great strides made in its development and use during the year.

### Acid Treatment of Wells

The process of stimulating production of oil and gas by the treatment with hydrochloric acid of wells producing from calcareous formations is not new, but the technique has been improved and adapted to varying situations to the extent that this operation is now uniformly successful where condiions are favorable.

The theory, of course, is that the reaction of hydrochloric acid (HCl) with lime (principally $CaCO_3$) results in forming carbon dioxide ($CO_2$), water ($H_2O$) and calcium chloride ($CaCl_2$), all of these products being either gas, water, or a salt which is readily soluble in water. The removal of a portion of the lime increases the permeability of the producing rock, and affords an easier path for the fluid to the well bore. The calcitic fines which have been found deposited in samples of pay rock bailed from producing wells, thus reducing its porosity, are very readily dissolved in the acid solution. It has been demonstrated experimentally on fairly large samples that such deposits are removed and the pore spaces enlarged by submergency in acid solution, rather than uniformly disintegrating the lime body. A great majority of the successful well treatments are probably due to this cleaning and enlarging of the pore spaces, rather than to any appreciable enlargement of the well bore. This thought is supported by the fact that the acid is forced from the well bore as quickly as possible in order that it may penetrate to a greater distance before the reaction is completed. This is done by loading with oil, and if necessary applying pump pressure. True lime ($CaCO_3$) reacts readily with hydrochloric acid, but dolomitic lime ($CaCO_3$ and $MgCO_3$) reacts very slowly and is almost inert at normal temperatures.

In the Panhandle area and the Permian Basin, better results have been obtained by heating the pay section in dolomitic wells, and also the acid solution and oil load. This preheating of the well bore is particularly essential in the Panhandle district, because of bottom hole paraffin deposition which effectively blankets the pay section from the acid. The practice is to steam the well, or circulate oil heated to about 180° F., for approximately 24 hours, thus heating the pipe and the face of the formation and removing the paraffin accumulation. In some instances, about 100 bbls. of hot oil is then forced into the pay section by pump pressure, before the "shot" of hot acid solution is introduced. A load of another 100 bbls. of hot oil is then pumped into the well, forcing the acid into the formation.

The rapid growth of the use of acid treatment is reflected by the following figures. Prior to January 1, 1933, only a relatively few wells had been treated in the Mid-Continent area. The treatment had been confined chiefly to the Michigan fields. The use of acid to remove gyp and lime scale from liners and from the well bore had been used in this area for several years, but the application of an oil load to force the acid into the pay was comparatively new. During the year 1933 the following number of wells were treated.

| | Wells |
|---|---|
| Central West Texas | 564 |
| Permian Basin | 230 |
| Panhandle | 90 |
| Total | 884 |

The first quarter of 1934 has shown a further increase.

In Central West Texas, where a large number of wells are producing from a limestone formation of low pressure, the acid was applied principally by gravity, except in the new wells drilled in Archer and Young Counties where the low permeability of the rock necessitated the use of pressure. The result was that average daily oil production per well was increased from 6.3 to 38.6 bbls., or more than 500 per cent.

### Object of Treating Wells

In the Permian Basin, which includes the Hobbs Field, the increase was much greater in barrels, being an average of 1,874 bbls. per well, but the per cent was only 124. Fifty-nine wells were treated in Hobbs. The object of treating was to obtain increased allowable oil production by raising the potential. However, this forced all the operators to treat, and, results being uniformly successful, no one received much immediate benefit from the increase except the acid-treating companies. Eliminating Hobbs, the average increase in the Permian Basin was from 44 bbls. before treatment to 243 bbls. after, or about 450 per cent.

During the first part of 1933, results in the dolomite wells of the Panhandle area were erratic, but with the development of heat application the treatments were much more successful.

In Kansas and Oklahoma, acid treating has not been so effective as in some other areas, but in some cases the results were satisfactory. In a considerable number of cases observed, the initial increases were satisfactory but the decline rapid. On such properties, projection of the decline curves now show little, if any, increase in ultimate recovery, but the time elapsed since treatment is too short for a very definite indication. From an economic standpoint, however, acid treatment seems justified if it does nothing more than cause the production of the previously indicated ultimate in a shorter period of time.

The result of second treatment of wells which showed large increases from first treatment with acid are not very well defined, as the time has been so short since the first treatment was applied that very few of this class of wells have been given a second "shot." Most of the second and practically all of the third treatments have been given to wells that did not respond materially to the first treatment.

A number of such examples have been observed, where stripper wells in areas of depleted formation pressure have responded to acid treatment with production increases of relatively small volume but satisfactory percentage with respect to their previous capacity. After a few months they have settled back to their old production rate, but as a rule not before the increased recovery during the period has repaid the cost of treating and shown a nice profit. Second, and, in a few cases, third treatments have been given, with results comparable with the first. These subsequent treatments are given at uniformly low expense, as little if any cleaning-out work is necessary.

In the few cases where second treatment was applied to wells which had responded favorably to first treatment, the decline curve indicates equally good or better results. It is, therefore, problematical as to the number of times such a well may respond to acid treatment, or as to its increase in ultimate recovery. Any decline curve now projected to the ultimate may be changed by additional treatments.

As a whole, the use of acid to increase production has opened a field that has previously been neglected. By this method properties that otherwise were not commercial producers are being made to pay well, thus causing the development of large areas that would otherwise have been abandoned. A notable example is the lime producing area in southwestern Archer County. In addition, a great many old wells which had reached their economic limit have been revived by the use of acid. These factors constitute definite evidence of increased recovery.

### Application of Pumping Powers

Central power development has been most pronounced in the geared power field. Starting about seven years ago with the worm type of geared power, the more recent years have seen the development of the tooth gear which includes the helical and herringbone type powers, rating from 35 to 160 horsepower.

The more recent powers have antifriction bearings throughout and a single or double crank. A maximum of 36-inch throw is obtainable. The band wheel powers, while not offering anything new, particularly, have increased the size and horsepower rating and can be purchased with a single eccentric which makes it competitive with the single crank geared power.

In this connection the use of backside cranks on standard rings to pull adjacent wells is gaining favor and can almost be classed with central powers as the number of wells connected is increased. This provides an economical setup for the operator who has a two to four-well lease, and even larger, where standard rings are already installed. If the standard rig equipment is not needed for use elsewhere, its operating cost may not be greatly enough in excess, to offset the investment of new money for a central power.

The roller rod line carrier has been improved to reduce friction on rod lines and allow more wells to be pulled by a single unit. Pumping jack development has been mostly along the lines of increased strength and efficiency, employing straight lift features and dust-proof and grease-packed bearings. The underpull type has about superseded the overpull type on account of the more efficient angle of pull obtainable, fewer bearings and moving parts and therefore lower cost of construction for a jack of a given capacity. It is also more adaptable to counterbalancing.

The self contained pumping unit which might be classed as a pumping jack has been widely exploited. Some very efficient and convenient units are available. To overcome the usual fault of the individual unit—that of being limited in stroke on account of the short centers—a unit has been put on the market which is capable of giving a 10-foot stroke keeping a straight line motion during this long stroke. The range of speed is wide being from 5 to 16 strokes per minute. This unit will no doubt be valuable in deep heavy wells where sucker rod stretch is an important item in pumping efficiency.

### Slow Speed Pumping

It has been widely recognized that the slower and shorter strokes on a pump would be helpful to the pumping equipment. Another feature, however, was the saving of power where electricity is used as a source of power. The decrease of power consumption is probably due to less inertia loss and reduced friction of all moving parts, and to increased efficiency from the small motor. A considerable development along this line has taken place in South and East Texas, on wells which, before proration, had been large pumpers and required 15 or 20 horsepower motors. By increasing the pumping time, such wells can be changed to slow speed pumps by installing 3 to 5 horsepower motors with the necessary reducing V-belt or chain drives. The larger motor may be used

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[2]Production engineer, Gulf Production Co., Houston, Tex.

## Gulf Coast Water Shipments for March, 1934

| Company, terminal— | Crude | | Refined | | Total |
|---|---|---|---|---|---|
| | Coastwise | Export | Coastwise | Export | |
| Atlantic P. L. Co.: | | | | | |
| Atreco | 1,212,874.91 | 234,124.72 | 10,584.71 | | 1,457,584.34 |
| Texas City | 297,840.29 | | 3,571.80 | | 301,412.09 |
| Harbor Island | 350,270.50 | | | | 350,270.50 |
| Gulf Refining Co.: | | | | | |
| Port Arthur | 382,730.60 | | 2,099,458.18 | 81,923.51 | 2,564,112.29 |
| Humble Oil & Ref. Co.: | | | | | |
| Baytown | 960,136.00 | | 1,681,434.33 | 777,624.59 | 3,419,194.92 |
| Harbor Island | 2,052,675.00 | | | | 2,052,675.00 |
| Ingleside | 100,350.00 | | | | 100,350.00 |
| Texas City | 469,703.00 | | | | 469,703.00 |
| Magnolia Petroleum Co.: | | | | | |
| Beaumont | 543,161.55 | | 2,014,982.52 | | 2,558,144.07 |
| Pure Oil Co.: | | | | | |
| Smiths Bluff | 324,181.00 | | 606,705.00 | | 930,886.00 |
| Shell Petroleum Corp.: | | | | | |
| Houston | 199,790.24 | | 1,064,653.81 | 13,402.74 | 1,277,846.79 |
| Norco | | | 521,095.69 | | 521,095.69 |
| Standard Oil Co. (La.): | | | | | |
| Baton Rouge | 81,164.00 | | 1,701,704.00 | 274,386.00 | 2,057,254.00 |
| Sun Pipe Line Co.: | | | | | |
| Sabine Pass and Sun | 1,646,321.15 | | | | 1,646,321.15 |
| The Texas Co.: | | | | | |
| Port Arthur | 1,214,338.00 | 394,520.00 | 1,786,961.00 | 813,086.00 | 4,208,905.00 |
| Miscellaneous: | | | | | |
| Houston | 1,674,102.12 | 160,495.00 | 505,468.56 | 577,415.20 | 2,917,480.89 |
| Total March | 11,509,638.37 | 789,139.72 | 11,996,619.60 | 2,487,838.04 | 26,833,235.73 |
| Total February | 10,473,755.53 | 1,120,132.05 | 10,786,985.86 | 2,443,968.66 | 25,124,742.10 |
| Difference | 1,035,882.84 | 330,992.33 | 1,209,633.74 | 93,869.38 | 1,708,493.63 |

as a countershaft, if desired. This also has the advantage of leaving the larger motor for servicing the well. Speeds may be varied by changing small sheaves or sprockets. The newer slow-speed pumping equipment employs the gear motor which is a self-contained motor and reduction gear. The chief disadvantage of this type of unit is the difficulty in changing pumping speeds.

The accompanying table gives the results of a number of these installations.

The saving shown in this table is based on a power rate of 14 mills per KWH, which is about the average where a fairly large total consumption is maintained. Where power costs are higher the saving and rate of return of the investment will be correspondingly greater.

It should be noted, in connection with this table, that the indicated reduction in power per cent is not entirely due to slow speed pumping. In every case a small squirrel cage motor operating in the upper portion of its efficiency curve was substituted for a 15/35 horsepower oil well motor which was underloaded and consequently operating at low efficiency. The manufacturer's rating curves indicate that at least 28 per cent in power is due to this fact alone.

### Application of Insert Pumps

Since proration has become a definite factor in the production of oil, it has become necessary to reduce the amount of oil produced from each well. In order to accomplish this wells were operated part time or at a reduced rate. The use of the small insert pump has increased rapidly during the past year, as its chief fault of reduced capacity no longer is an objectionable factor. The advantage of replacing the standing valve and working barrel without pulling tubing has saved a considerable amount of money for the producer. The reduced polished rod load has decreased the sucker rod and surface equipment trouble. There are numerous types of insert pumps, the most popular probably being the one which employs cups and repacks. In the smaller sizes such as 1-inch, or 1¼-inch, a straight plunger is employed. Variations of the plunger type are the grooved plunger and fluid packed pumps which depend on the viscosity and turbulence of the oil as a seal to prevent slippage.

Careful laboratory tests indicate a life of 5 to 10 times that of plain working barrel pumps with cups, especially where severe sand conditions exist. It must be kept in mind, however, that in the case of large producers of oil or water the common barrel and cups will have to be used, with the grooved plunger or steel rings competing with the traveling valve cup assembly.

### Pneumatic and Hydraulic Pumps

A means of eliminating the use of sucker rods for pumping wells is being sought with increased vigor, especially since oil is being pumped at greater depths. Various kinds of pneumatic and hydraulic bottom hole pumps have been tried without any outstanding success. There is, however, a hydraulic pump in operation that is actuated by oil pumped from the well, the power being furnished by a surface pump. The operation of this pump requires high bottom hole working pressures and two strings of tubing and involves considerable expense when repairs are required. It has been reported that this pump will give long periods of service without pulling and with a minimum of power.

The other pump which eliminates the use of sucker rods is the electric driven centrifugal pump which has a field in production of large volumes of oil or water; also a reciprocating pump driven by a submerged electric motor, and employing a train of gears to reduce the speed and convert rotary motion to reciprocating motion is in the experimental stage.

In the pneumatic pump field the most outstanding development is the pneumatic pumping jack. This equipment is swung in the derrick and exerts a direct pull on the sucker rods. It can be used in conjunction with an individual compressor unit or as one of a number on a lease with a central compressor station. The chief advantages are long stroke, facility in adjusting length and speed of stroke, uniform acceleration which minimizes shock stresses on rods, maximum recovery value, and extreme portability from one well to another, as no foundation is required. In order to obtain highest efficiency, the air or gas after compression should be heated to 400 or 500° F. On multiple installation this is accomplished by a heater located near each well. On an individual unit where the compressor is located near the well, an exhaust heater is adequate for raising the gas, which retains its heat of compression, to approximately 400° F. temperature. The cost of a one-well installation (including jack and compressor) will approximate the cost of a steel standard rig.

### Gas Lift and Staging Devices

Gas lift devices have received considerable attention recently, particularly in East Texas, Refugio and Oklahoma City. A number of devices are being tried out, most of which are essentially aeration ports spaced about 500 feet apart in the tubing string. These usually include an automatic valve which limits the amount of gas through each port, and this stage lifting greatly reduces both the kickoff and operating pressure. The success of these devices seems from the tests so far conducted to depend to a considerable extent on the characteristics of the individual well in which they are tried. Gas oil ratios in these tests vary from 250 to 4,000 feet per barrel. Installation costs are low, and where gas-oil ratios are low these devices furnish a very economical means of production. There is considerable doubt, however, whether this method can be employed throughout the life of a well, for when the fluid level recedes close to bottom, it will probably be necessary to resort to some other means of lifting the oil.

A somewhat different variation of the gas lift principle is that which raises the oil in "slugs." Two of these devices, which are still in the experimental stage, use a double string of tubing, one inside the other, with a set of float-operated valves in a pump chamber at the lower end of the tubing. Gas is forced down through the annular space between the tubing strings and when the chamber is filled with oil a valve is opened and a slug of oil blown out through the inner string of tubing. The valve is then closed by the float, and the pressure in the chamber vented into the casing. The chamber is then allowed to fill again and the process repeated.

The third device utilized a plunger traveling the full length of the tubing to separate the actuating gas beneath it from the slug of oil above it. A valve in this plunger opens after the oil above it has been discharged from the tubing, and the plunger then drops through the tubing and picks up another slug of oil. This device, which has undergone very thorough testing for several years, has proved successful on certain types of wells, but has one disadvantage in that the tubing must be reamed to give the proper clearance for the plunger, an operation which greatly increases the installation cost.

Another device similar in principle to this one, but employing a plunger that will operate in unreamed tubing, is now in the experimental stage.

The chief advantage of these slug lift devices lies in the fact that they will operate at low pressure, the pressure depending not on the depth of the well but on the length of the slug, which is controlled at will by the operator.

### Wooden Tanks for Field Storage

Considerable development of Redwood lease tanks has been done in areas of corrosive oil. The latest development has been the grooving of each stave to allow a water seal at each joint, and a gas-tight deck upon which water is carried. This eliminates the drying out of a tank and provides a seal to prevent seepage of oil between the staves. This type of tank has been most successful in West Texas and Kansas where a record of tank cost showed a cost of about $180 per 500-bbl. tank per year replacement on steel tanks to practically nothing for the wood. The average life of a steel tank is about three years. It has also been noted that less basic sediment and paraffin accumulate in winter, due to the better insulating qualities of the wood. Where cut oil is being treated it is more easily heated than in a steel tank where heat dissipation is greater.

### Well Servicing Equipment

Mobility and speed has been the aim in designing well servicing equipment in recent years. The old tractor is rapidly being replaced with pulling machines mounted on high speed trucks. Since proration, the frequency of pulling has decreased until now one gang can service more wells than formerly. Therefore, their range has been extended to cover a greater number of leases, one machine sometimes being used to service leases in the radius of 20 to 30 miles. Winches mounted on trucks and driven with power takeoff from the truck engine are common. The individual motor-driven winch is probably more popular. The chief reason for this is that the machine can be transferred to another truck easily in the event one truck is out of service for repairs. The cost of the separate motor job is only slightly more than the power takeoff and there are two motors instead of one which should give added life to the entire setup. Double winch jobs are available for cleaning-out work and a spudding attachment is added to handle light tools or a spudder bailer. Larger drums, increased horsepower and greater brake capacity have all been necessary as the use of portable machines has been extended to deeper wells.

The increased use on deeper wells of pumping powers, and other equipment designed for efficient oil lifting only, makes the well servicing equipment increasingly important.

## The Oil Man's Calendar

### May

12-19—Tulsa, International Petroleum Exposition.

14-21—New York, American Institute of Chemical Engineers (tentative), Waldorf-Astoria Hotel.

17-18—Roanoke, Va., Virginia Oil Jobbers Association, and Virginia Oil Men's Association.

21-22—Lake Charles, La., National Oil Scouts Association of America, annual convention.

21-22—New York, American Gas Association Joint Committee Conference of Production and Chemical Committees, Hotel New Yorker.

22-24 — Pittsburgh, Pa., midyear meeting, A. P. I. divisions, William Penn Hotel.

24-25—Roanoke, Va., Virginia Oil Jobbers Association, Virginia Oil Men's Association, and Virginia State Petroleum Committee, Hotel Roanoke.

### June

7—New York, Automobile Chamber of Commerce.

12-14 — Fort Smith, Ark., U. S. Good Roads Association.

14-15 — Grand Forks, N. Dak., Northwest Petroleum Association, North Dakota Division, Dacotah Hotel.

14-15—State College, Pa., Pennsylvania Grade Crude Oil Association.

17-22—Saranac, N. Y., Society of Automotive Engineers, Saranac Inn.

25-29—Denver, Colo., American Society of Mechanical Engineers, Cosmopolitan Hotel.

25-29—Atlantic City, N. J., American Society for Testing Materials, annual meeting.

28-29—Charleston, W. Va., West Virginia Oil Marketers Association.

28-29—State College, Pa., Pennsylvania Grade Crude Oil Association.

### August

24-27—Titusville, Pa., Drake Well Memorial Celebration.

### September

Atlantic City, N. J., North American Gasoline Tax Conference.

9 — Wernersville, Pa., American Trade Association executives.

10-14 — Cleveland, Ohio, American Chemical Society.

19-21 — Atlantic City, N. J., National Petroleum Association.

### October

1-5—Cleveland, Ohio, National Safety Council, Cleveland, Statler, Carter and Hollenden Hotels.

9—Michigan Independent Petroleum Distributors Association, place to be named later.

16-18—Big Four State Jobbers Association Convention, Kansas City, Mo.

29—American Gas Association Convention and Exhibition, Atlantic City, N. J.

### November

5-9—Cleveland, Ohio, Automotive Service Industries Show, Cleveland Public Auditorium.

Los Angeles, Calif., American Association of Petroleum Geologists, Pacific section.

12-15—Dallas, Tex., annual meeting, A.P.I.

COMPARATIVE COST OF POWER FOR PUMPING

| Installation number | Pumping depth (feet) | Before change: Length of polished rod stroke in inches | Before change: No. strokes per minute | Before change: KW load | After change: Length of polished rod stroke in inches | After change: No. strokes per minute | After change: KW load | Saving: Dollars per day | Saving: Per cent |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 2,700 | 20.25 | 20 | 3.17 | 45.75 | 5.5 | 1.27 | .638 | 60 |
| 2 | 2,485 | 30 | 24 | 4.6 | 37.5 | 8 | 1.16 | 1.156 | 75 |
| 3 | 2,025 | 20 | 24 | 4.55 | 34 | 12.5 | 2.5 | .689 | 45 |
| 4 | 2,523 | 37 | 25.5 | 4.3 | 37 | 5.5 | 1.4 | .974 | 68 |
| 5 | 3,000 | 29 | 25 | 3.9 | 29 | 6 | .96 | .988 | 75 |
| 6 | 3,050 | 35 | 24 | 4.5 | 35 | 5 | 1.5 | 1.010 | 67 |
| 7 | 2,375 | 27.5 | 26 | 5.2 | 27.5 | 7 | 1.3 | 1.310 | 75 |
| 8 | 2,150 | 27.5 | 25 | 5.8 | 27.5 | 8 | 1.3 | 1.512 | 78 |
| 9 | 3,100 | 26.5 | 22.5 | 4 5 | 36.5 | 7.5 | 1.6 | .974 | 65 |
| 10 | 2,840 | 31 | 24 | 4 0 | 38 | 6.5 | 1.8 | .739 | 55 |
| Average | | 29.4 | 24.0 | 4.45 | 34.8 | 7.2 | 1.48 | .999 | 66 |

# Advantages of Natural Gas to Local Company; Opportunities for Leveling Demand Curve

By ROBERT W. HENDEE
President, Oklahoma Natural Gas Corp.*

In discussing the advantages of natural gas to the local gas company, it is with the assumption that its use, straight in some communities and mixed with manufactured gas in others, is relatively a new venture to the members of the Mid-West Gas Association. It is also realized that in many parts of your territory, natural gas is as yet an unknown quantity.

The general theme of the talk will be that natural gas can be and is used as a universal fuel. Probably this point will be stressed more than any other, because in it lies the chief advantage of natural gas over other fuels. Of course, it is recognized that manufactured and mixed gases will perform the same functions as will natural gas, but usually natural gas, with its higher heating value and lower cost, is far easier to sell as a universal fuel than those mentioned above. For this reason, natural gas is considered by itself in the following discussion.

It will not be the purpose to sell natural gas by negative selling in running down other fuels, but by the attempt to prove to you that it is not only a universal fuel, but an ideal fuel for all purposes. The benefits which will accrue to the local gas company, therefore, will obviously fall into three classifications: Advantages to the residential, commercial, and industrial customers.

### Residential

As a universal fuel in the residence, there is no disputing the advantage of natural gas. Consider, if you will, the modern gas equipped home. In the basement may be found the compact, clean, gas-fired furnace or boiler. In the early fall the pilot is lighted, the thermostat is set at the desired daytime and nighttime temperatures and the next thing to worry about is, after the chilly days of winter are over, to turn off the pilot; two operations during the heating season to insure a warm, comfortable home. Where can such a simple procedure to insure the comfort of one's home even be approached?

Going further into the subject of house heating, air conditioning must be considered. By the same simple, automatic regulation as in heating this can be, and is, accomplished by the use of the modern, gas-fired furnaces.

Closely related to the subject of house heating is that of cooling. It appears that one of the greatest opportunities for sales promotion and leveling of the demand curve for residential customers is the perfection and adoption of an all gas-heated, conditioned, and cooled house. This is coming; and it should be one of the purposes of this association to assist and further this development.

In this same clean basement are other very important and indispensable gas appliances. Next to the gas-fired furnace in value to the home comes the automatic hot water heater, which supplies the hot water requirements of the household year in and year out without adjustment.

Only the owner of a gas-burning incinerator can realize its importance in the basement right along with the furnace and hot water heater. What can be more convenient in a home than a clean, easy method of disposing of all accumulations of garbage and trash by merely emptying them into one of the modern incinerators? An occasional application of the gas flame does the rest. Is this not far superior to any known method for their disposal? No papers to be blown about the yard or streets, no garbage can to attract disease-carrying flies. Community pride and the health consideration should make the use of natural gas in the home incinerator an incentive to the local gas customer.

Besides these necessities for the basement of the modern home may be found gas-heated mangles, washing machines and clothes driers, all of which add to the satisfaction and contentment of the gas user and reflect to the benefit of the gas company.

There are many days and nights in the early fall or late spring when it is hardly necessary to turn on the furnace in order to warm portions of the home for brief periods of time. Natural gas equipped homes have the answer to this in well-located space heating units. Temporary heating can be accomplished at small cost without the necessity of heating an entire furnace or boiler.

In the kitchen can be found two of the most beautiful efficient appliances in the home; namely, the cooking stove and the gas refrigerator. It is needless to dwell on them, for all gas men are well versed in the tremendous improvements made in both of them. But they, in their turn, contribute to the comfort of the satisfied customer.

### Advantages to Consumer

What, then, are the advantages in the use of natural gas from the viewpoint of the residential customer, for, after all, his viewpoint should be our first consideration.

The natural gas customer has only one fuel to buy and it will provide for all of his requirements. It travels straight from nature's reservoir underneath the ground through a single line to his home. No winter's supply must be ordered and paid for in advance; no valuable space must be provided and set aside for its storage; this is taken care of by the local gas company. An unlimited supply is available to him merely at the turn of a valve, and only the amount consumed must be paid for.

In addition, natural gas as a household fuel makes for a clean and healthy home. Clean, properly conditioned air, warmed in winter and cooled in summer, is one of the most important adjuncts toward health in the home and must be given first consideration by the local gas company in any sales promotion.

Besides the health consideration is the very important viewpoint of the lady of the house. With the use of natural gas as a universal fuel in the home, there is no dust, no soot, no grime, which means that curtains, drapes, rugs, and carpets can go through one season, yes, several seasons, without the wear producing process of washing and cleaning.

These features, you may argue, are perhaps advantages to the individual and the community, rather than to the local gas company; but anything which is to the advantage of the community is obviously to the advantage of the company.

Increased sales means increased income; happy and satisfied customers are a tremendous asset not only to the gas company, but to any business.

### Commercial

According to most classifications, commercial customers include hotels, restaurants, office buildings, churches, schools, hospitals, apartments, laundries, etc. Again, the local gas company distributing natural gas will find that it is the ideal fuel to be used in all of the processes and needs of these customers.

Taking the hotel, because of its many fuel requirements, as an example, every need for a fuel can be met by natural gas. Heating, cooling, refrigeration, hot water heating and incineration can all be done efficiently and economically by one fuel through one line. In these days of budgeting of space to produce the greatest income, certainly the small amount of space necessary for gas meters, regulators and gas-burning equipment will be given careful consideration by the user.

The same advantages of simplicity of operation, cleanliness, etc., which inure to the benefit of the residential customer can be cited for the commercial customer.

Besides these advantages for them, and which will follow through to the gas company, is a tremendous matter of civic pride. This is the cleanliness of the city, as a whole, which comes through the use of natural gas as a universal fuel.

As proof of this, Tulsa, which is as nearly 100 per cent natural gas saturated as any city, is called the cleanest city in the world. Visitors to the city have stated that new buildings in their home towns are not as clean on completion as are buildings in Tulsa after many years of occupancy. The utilization of natural gas not only results in a clean city, a clean house and clean stores, but personal cleanliness, as well as personal comfort, is enjoyed. Our friends in some of the smoky, dirty cities often find it necessary to change collars twice a day. In natural gas burning towns and cities there are those frugal individuals who find it possible to wear a white collar or white shirt two days and still present an appearance satisfactory to meet the most exacting requirements.

### Industrial

It is in the application of natural gas to industries that the greatest advantages to the local gas company may be demonstrated. All that business is normally out of reach of the distributor of manufactured gas. In this direction, therefore, is the greatest opportunity for expansion, growth and profit presented to the local gas company.

The effects of the availability of natural gas in a community are both tangible and intangible in their scope. In addition to the actual sales made to the manufacturing and other industrial concerns is the increase in the number of domestic and commercial accounts which will naturally follow. The availability of natural gas—a cheap, all-purpose fuel—brings industrial growth, attracts new industries to the community. New industries bring new wholesale and retail merchandising enterprises; new businesses and new payrolls; a new prosperity to the community. As your community grows and prospers, so will your gas company grow and prosper, for your success and the well-being of your territory are inseparably conjoined.

Let's take a glimpse at the tremendous influence which natural gas had in the development of the so-called Mid-Continent area. Until the utilization of natural gas for industrial purposes began, this area was devoted almost exclusively to agriculture and livestock. Beginning in 1897, natural gas opened the doors to a wide variety of industrial en-

*Presented before Mid-West Gas Association, Sioux City, Iowa.

# Socony-Vacuum Stockholders to Vote on Matters Looking to Changed Setup

NEW YORK, May 12.—A final move to consolidate operations of the several subsidiaries of the Socony-Vacuum Corp. into one unit is indicated in an announcement sent out this week to stockholders covering action to be taken at the annual meeting on May 31. Stockholders on that date will be asked to approve a change in name to the Socony-Vacuum Oil Co., Inc., in line with the plan to make the parent corporation an operating company rather than a holding unit, as in the past.

Stockholders at the same meeting will vote on the writing off of $228,123,580 against capital surplus involving a reduction in the present par value of the stock from $25 to $15. Finally the matter of changing the by-laws will be submitted because "your directors feel the present by-laws as a whole are antiquated and do not readily meet the requirements of a large operating company."

All the matters to be submitted to the stockholders are interpreted as a further development in the plan of officers to integrate and consolidate the wideflung operations of the Socony-Vacuum companies and strengthen its operating position, particularly in the United States. The present corporation was brought about by a merger of the Standard Oil Co. of New York and the Vacuum Oil Co. in 1931. Previously each company had acquired several important operating units scattered throughout the United States as subsidiaries.

These subsidiaries now include the Magnolia Petroleum Co., Dallas, Tex.; General Petroleum Corp., Los Angeles; White Eagle Oil Co., Kansas City, Mo.; White Star Refining Co., Detroit, Mich.; Wadhams Oil Corp., Milwaukee, Wis.; Lubrite Refining Corp., St. Louis, Mo., and several large jobbing units. These companies, including the Standard Oil Co. of New York, Inc., and the Vacuum Oil Co., Inc., have to a large extent continued their separate operations with the parent corporation acting as a holding unit. It is assumed that the parent organization is preparing to end these individual operations where feasible including the dropping of subsidiary names. Some of these companies are integrated in the their operations whole others have refineries and marketing facilities. These subsidiary operations have been shifted somewhat over the past two years to prevent overlapping.

In the marketing end, the way has been paved for final consolidation by the adoption of uniform trade names for gasoline, motor oils and other petroleum products. The brand names of the subsidiary units have been dropped in most cases. It is pointed out that the final consolidation and the ending of the separate identities will permit a general sales policy, facilitate national advertising and assure the

(Continued on Next Page)

terprises in southeastern Kansas. That portion of the Sunflower State, which is bounded on the west by Wichita and on the north by Iola, became an industrial beehive. Coffeyville, Independence, Chanute, Parsons, Iola, Cherryvale and Fredonia overnight were converted from small, sleepy agricultural communities to centers of industrial activity. Glass factories, cement plants, brick plants and smelters were located in this area and went into active operation.

In 1907, this same industrial activity, begun by the discovery and development of natural gas, reached into Oklahoma, and in more recent years it followed in Texas, particularly in the area around Amarillo.

To natural gas must go much of the credit for the marvelous growth and development of these three great commonwealths, and for their industrial growth, the lion's share of the credit belongs to this perfect fuel.

Some of the nation's foremost geologists, technologists and engineers now unite in saying that the next great oil and gas development will occur in northern Kansas and Nebraska. This is exceedingly interesting to those of you who are operating in those states, for if these statements come true, this rich agricultural section will witness unprecedented activity and prosperity.

### Conservation of Gas

Considering all of the advantages which may accrue to a local gas company by the use of natural gas, is it not important that this paper be closed with a thought on the conservation of this wonderful God-given natural resource?

There is no perpetual motion. The most perfectly set up machine in the world will not operate efficiently unless it is taken care of, lubricated and kept in repair. The great reservoirs of natural gas cannot be expected to last forever. They must be taken care of. They must be nurtured. And if they are taken care of and protected, and modern principles of conservation followed, the communities of the Middle West will have the enjoyment of this wonderful fuel for many years to come. We can safely follow the precedents set by municipalities in Pennsylvania, Ohio, Indiana, and Kansas in the utilization of natural gas and the pleasure and enjoyment derived from the advantages offered by it, but, if we are to continue, we must profit by the grevious errors and mistakes those other communities made. In the beginning, it was generally thought that natural gas reservoirs were inexhaustible. We now know that it takes millions of years to generate gas in the earth and that, unlike water, nature does not continue to maintain the supply. Operators of natural gas producing properties now apply scientific and technical knowledge to their problems. Condition of the producing sands is carefully studied and analyzed. The thickness of the sand, its porosity, its location below the surface and with reference to sea level, are carefully studied. We are now able, with a great degree of accuracy, to measure the life of a natural gas well. We have learned that once natural gas is released into the atmosphere, it can never be recovered and is, therefore, wasted.

The year 1933 witnessed a tremendous overproduction of petroleum and natural gas. There was great waste but, fortunately for the industry and for communities being served by this industry, legislative bodies and executive officers of the producing states are now taking drastic steps to insure the conservation of this wonderful fuel. However, they have not gone nearly far enough. The natural gas underlying the surface of the earth belongs to the people.

It should not and must not be wasted, and you gentlemen who operate gas distributing companies hundreds of miles from the production are just as vitally interested in conservation movements as the owners of the natural gas wells themselves. I plead with you now to read and study your natural gas publications. You will observe that new legislation is proposed, looking toward more stringent conservation, and I urge you to follow these steps with your acquaintances either in the gas producing states or in the national capital, to the end that conservation laws and rules may become tighter and be more rigidly enforced. Unless we are able to conserve this fuel, there are those who will witness the loss of the comforts and conveniences they now enjoy.

It has recently been said: "The security of any natural gas company's service lies in the extent of its gas reserves." Today your community and mine is assured of an abundant supply of natural gas, but this fuel must be conserved for the tomorrows. This will not be possible unless you and I, and every one else connected with the gas industry, unite in insisting upon conservation.

## Stockholders to Vote on Socony-Vacuum Setup

(Continued from Preceding Page)

company the maximum benefit from its station operations which now cover a large part of the United States with a national distribution of motor oils and industrial oils in which the original Vacuum Oil Co. was a pioneer.

### Change in Capital Structure Necessary

This consolidation of the subsidiary units emphasizes the necessity of changing the capital structure of the new operating company so that it will not be burdened with certain of the capital assets now held by the subsidiary companies. In explanation of this situation the letter to stockholders signed by Herbert L. Pratt, chairman of the board, and J. A. Brown, chairman of the management committee appointed last fall, said in part:

"As a result of these transactions Socony-Vacuum Corp. received in some cases intangible assets attaching to the companies acquired, such as trade-marks, trade names, licenses and other values commonly termed good will, and in other cases certain tangible assets carried on the books of the selling companies at appreciated values at the time of sale. No change in the book value of these assets has been made by the corporation since their acquisition, and your directors feel that this is an appropriate time to take steps to write them off in part or in whole, so that the balance sheet of the corporation will not reflect values for these intangible assets or for appreciation of these tangible assets.

"The items under consideration have been segregated on the consolidated balance sheet as of December 31, 1933, under the caption good will and appreciation of properties, including trade-marks and trade names, and amount to $228,123,580. To write off this amount gradually against earnings would, for a long time to come, result in charges against earned surplus otherwise available for dividends, and it is felt that this would neither be in the best interest of the stockholders nor conform with good accounting practice."

### 1933 Profits

The corporation's statement this week showed a net income of $22,545,462 for 1933, or 71 cents a share on the 31,708,457 shares of common stock outstanding. Sales of crude oil and refined products in 1933 totaled 105,571,310 bbls. Domestic payrolls last year totaled $60,984,758 against $59.885,404 in 1932. Gross fixed assets on December 31, 1933, were $838,127,057 with reserves for depreciation, depletion and amortization totaling $452,804,731.

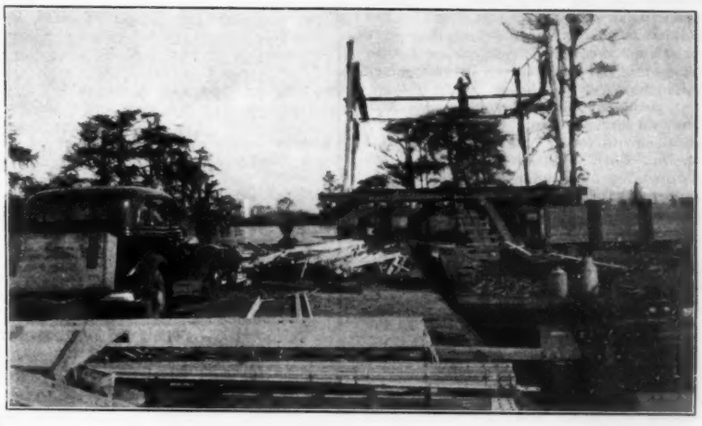
### Foreign Operations

Officers of the corporation point out that its foreign position has been strengthened. In Argentine it has merged its marketing operating with the Texas Corp. and in the Far East the company merged with the Standard Oil Co. of New Jersey in the organization of the Standard Vacuum Oil Co.


# PROGRESS

## From quiet water to busy drilling rig.

To the right is piling foundation for 136-foot derrick on Black Bayou location in Louisiana. This is the start of a complete installation by Dewey T. Ross, Inc.



Above: Steel work started at 7 A. M.

Lower: Same scene after 5½ hours working time. This organization is equipped to give fast service on big jobs or small. You get first class workmanship on both.

Activities extend from the Panhandle through East Texas to the Gulf Coast.

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# Factors in Economical Multiple Well Pumping Possible by Correct Application of Science

By GEORGE L. REID
Joseph Reid Gas Engine Co.

To those who are familiar with the field conditions in Warren and adjoining oil producing counties, it is scarcely necessary for me to say that the oil industry in this region stands at a critical point in its development. If the producer is to survive as a producer of crude, he must adopt new and radical methods to wrest from the depleted sands that part of the oil available under the new methods of recovery. While these methods are not a problem of discussion for this paper, they have such a bearing on the machinery of repressuring that any discussion of present machinery of production is quite inadequate which does not in some measure anticipate the coming needs of the district.

With that native ability, peculiar to all those who exploit the mineral resources of the earth and particularly those who produce oil, the operator has taken that machinery which has been available and suited it to his own especial problems in a manner that has given him the nearest satisfaction to the accomplishment of his problem. He was not a technical man, but rather a practical one to whom results were the vital factor. Both time and resources were limited for him and a study of his machinery by himself seemed out of the question. As long as the machine did the work without too much shutdown time, or too much expense, it was considered satisfactory, and some of the troubles which developed were considered unavoidable.

With the advent of engineering in the oil industry and necessity for the utmost economy in the late years, came also a study of pumping problems as related to multiple well pumping from a centrally located power, and a great amount of information was gathered which had formerly not been available, or in fact, known to exist.

### Technical Data Assembled

It was not until four years ago that any material effort was made in the eastern oil fields to gather any actual technical data on power pumping loads and forces. Little had been done in the West and there was no printed data of any kind available as a guide. Certain rule-of-thumb methods had always been used with varying results, and manufacturers knew within reasonable degrees the limitations of their machinery.

With the coming of water flooding in the Bradford and Bolivar areas, pumping problems assumed significant proportions. This was due to two things: the volume of fluid to be handled and the adverse surface conditions which were typical of that particular district. While the fluid problems are not encountered here yet, we do find much the same surface conditions and the solution to problems arising from this source is the same in either case.

As the loads increased, power difficulties and failures became greater. It was at once apparent that careful studies would have to be made with special test equipment to accurately determine loads and forces in their relation to the power. Accordingly, the Joseph Reid Gas Engine Co. purchased a dynamometer, or weighing device, which when properly applied to the rod line gave the actual pull exerted by that rod line on the power eccentric. This instrument was applied to machinery located in the northern fields and immediately a vast amount of information and data became available in actual figures that had previously only been guessed at. The producing company on whose property we first did the work purchased one of these instruments and a trained crew was put into the field to gather data. Since then power pumping has become somewhat of a science in itself and by the correct application of this science, tremendous economies have been effected.

Credit is due to K. B. Nowels, of the Forest Oil Corp., for the direction of investigation of pumping power loads and for the correlation and tabulation of the data gained therefrom. The full technical discussion of this problem is published in the Pennsylvania State College Bulletin of the Mineral Industries Experiment Station, Bulletin No. 11, published in 1932.

### Simplified for Laymen

Since our work was preliminary to this, and in a small measure anticipated the later findings, Mr. Nowels has kindly consented to allow me the use of his data, and it is my purpose to present it in a more elementary form for the benefit of those of us who are laymen on the subject, when I shall refer to it.

The question most often asked the manufacturer by a prospective power user is, "How much power will it take to pump my wells?" or "What size and type power should I use?"

No single rule may be laid down for the computing of the power required to pump wells or to drive a power. The most readily available data which gives one a basis for figuring are the fluid load and the depth of the well. Even one of these factors is not constant for the fluid load is subject to much variation over a period of time. In addition to these known factors, we have the following unknown factors which make for additional load on the power:

Ground contours of surface conditions.
Distance from well to power.
Temperature variation.
Nature of rod line.
Type of jack.
Future development program.
Fluid variation.
Straightness of hole.

To permit the most economical and trouble-free operation of a power, the eccentrics should at all times be in balance. They should balance each other if it is a two-eccentric power, and the ring of the eccentric should also be so loaded that it exerts an even load against the hub during the revolution of the power.

It is not sufficient to balance a power in respect to the load on the prime mover alone. While applying all wells on one side the powerhouse to one eccentric and all wells on the other side to the other eccentric would balance the load as far as the engine was concerned, yet it would be a distinct disadvantage relative to the power and would ultimate result in destruction of the eccentrics and rings.

We found one power which seemed to be in fair balance in relation to the load on the engine. However, when we applied the dynamometer to the power, we found that on the upper eccentric there was a pull of 38,000 pounds which was balanced by only 1,800 pounds on the other side of the eccentric. This power had given trouble due to heating and eventual cutting of the eccentric and ring. This condition on the lease of this large eastern producing company was not due to carelessness so much as oversight, in that they had expected to develop the property on both sides of the power, and had temporarily suspended work.

The above condition is, of course, unusual. With a properly installed power, the usual sources of trouble arise from faulty shackle work. Very often this shackle work has been improperly installed and more of it is due to lack of careful inspection of the surface equipment between the power and the well.

In installing a rod line from the power to the well, the rod line should be kept as near the same plane or level with the power eccentric to which it is attached as possible. This is the ideal method of installation, and in broken and hilly country, such as exists in the eastern fields, such an installation is, except in a few rare instances, out of the question. However, every effort should be made when installing rod lines to permit a rise of not more than 5 or 6 inches from the horizontal plane within a distance of 100 feet from the power. From that point on variations from the horizontal should be made as smoothly as possible and much care should be given to the installation of swings, tie-backs and rod line supports.

Swings should be so installed as to give a sweeping rather than a jerky motion to the rod lines. Where tiebacks are used, care must be exercised to attach and support them so that they are at right angles or as nearly a right angle to the rod line as possible. Otherwise there is too much dead pull against the tieback support and a consequent increase in friction.

The best suspension methods for rod lines is one which supports the rod lines by swings allowing a pendulum motion on the support. While this type support may cost a little more for installation yet it will pay for itself in fuel used and in general wear on equipment.

### Proper Lubrication

Even with the best methods of installing equipment being used, the operator will in a large measure defeat his aims if he is careless in lubricating this shackle work. Where the dynamometer has been applied before and after proper lubrication, it was found approximately one-quarter horsepower per well was being absorbed by friction due to poor lubrication.

Of all sources of friction, the setting of the well jack has been shown by the dynamometer to be among the foremost factors affecting the economical operation of powers. In the work conducted by Mr. Nowels, relative to the setting of pumping jacks, it was discovered that savings ranging from $6 to $60 per year per well could be effected. This is savings in fuel alone, where gas was being purchased at 50½ cents per 1,000. The writer has noted friction loads from almost one-tenth to 1 horsepower which could be eliminated by changing the setting of the jack.

### Jack Setting

The later work of Mr. Nowels has brought out the following salient points

## Where Greatest Economies May Be Effected

It is the aim of this paper to present some of the findings regarding the economical methods of operating pumping powers. Also included are comments on the Diesel engine as related to the repressuring programs which will be undertaken in this and surrounding districts.

It has been found that the greatest economies effected in power pumping come from correct setting of the jack, proper lubrication of the surface equipment between power and well, and the correct installation and care of the shackle work. Savings of from $6 to $60 per year per well have been made relative to the above conditions.

Below are tables showing the approximate horsepower per 1,000 feet for one well. Depending on the balance of the power these figures should be increased 50 to 100 per cent.

**1,000-Foot Well, 2-Inch Tubing, 1¾-Inch Barrel**

| Length of stroke (inches) | Strokes per minute | | | | | |
|---|---|---|---|---|---|---|
| | 10 | 12 | 14 | 16 | 18 | 20 |
| 12 | .31 | .37 | .44 | .50 | .56 | .64 |
| 14 | .36 | .43 | .51 | .58 | .65 | .74 |
| 16 | .42 | .50 | .59 | .67 | .75 | .84 |
| 18 | .47 | .56 | .66 | .75 | .84 | .95 |
| 20 | .52 | .67 | .73 | 84 | .94 | 1.05 |
| 22 | .58 | .69 | .81 | .92 | 1.03 | 1.16 |
| 24 | .63 | .75 | .88 | 1.01 | 1.12 | 1.26 |

**1,000-Foot Well, 2½-Inch Tubing, 2¼-Inch Barrel**

| | | | | | | |
|---|---|---|---|---|---|---|
| 12 | .52 | .63 | .75 | .84 | .94 | 1.04 |
| 14 | .61 | .73 | .87 | .98 | 1.09 | 1.21 |
| 16 | .70 | .83 | .99 | 1.12 | 1.25 | 1.38 |
| 18 | .79 | .93 | 1.11 | 1.26 | 1.40 | 1.55 |
| 20 | .88 | 1.03 | 1 23 | 1.40 | 1.56 | 1.73 |
| 22 | .96 | 1.13 | 1.35 | 1.54 | 1.72 | 1.90 |
| 24 | 1.06 | 1.23 | 1.47 | 1.68 | 1.87 | 2.07 |

**1,000-Foot Well, 3-Inch Tubing, 2¾-Inch Barrel**

| | | | | | | |
|---|---|---|---|---|---|---|
| 12 | .78 | .94 | 1.09 | 1.25 | 1.41 | 1.56 |
| 14 | .91 | 1.09 | 1.27 | 1.46 | 1.64 | 1.79 |
| 16 | 1.04 | 1.25 | 1.45 | 1.67 | 1.87 | 2.03 |
| 18 | 1.17 | 1.41 | 1.63 | 1.88 | 2.11 | 2.26 |
| 20 | 1.30 | 1.56 | 1 81 | 2.09 | 2.34 | 2.50 |
| 22 | 1.43 | 1.72 | 2.00 | 2.30 | 2.58 | 2.73 |
| 24 | 1.56 | 1.88 | 2.18 | 2.51 | 2.81 | 2.97 |

regarding jack setting. These remarks are relative to the Oklahoma type jack, but further experimenting will probably reveal like results with other type jacks.

On wells located on reasonably flat ground, considerable saving in friction, and therefore power required, may be gained by having the jack beam and brace rise no higher than the horizontal position of the upstroke.

On wells located downhill from the power, a short brace and longer upright should be used and under this condition, the stroke should be half below and half above the horizontal position.

Wells located uphill from the power already have the advantage in rod line leverage and there is nothing to be gained by a change in the upright or brace. A half-and-half travel above and below the horizontal is satisfactory.

I should like at this point to quote from Mr. Nowels' paper regarding this matter of the setting of the jacks:

"There is no mystery about the savings which can be effected by proper installation of jacks, as it is all a question of attaining the most effective leverage between the rod line, the upright brace, and the fulcrum or saddle. Probably a broad rule to go by would be that at the top of the stroke, the upright brace of an Oklahoma type jack should be approximately at right angles to the rod line at the jack. To have this arrangement, it may sometimes be necessary to change the jack foundation or lengthen the rod line by means of its turnbuckle, or, in the case of wells lying downhill from the power, to shorten the brace and lengthen the upright . . ."

### Power Required

Contained in the abstract of this paper are tables showing the power necessary to pump wells. These tables are condensed from larger tables compiled by the writer and previously published in The Oil and Gas Journal and Internal Combustion Power. To the power given in the table should be added from 50 to 100 per cent to care for friction loads. The operator will have to judge this, depending on how much care he has taken to fulfill the requirements of good balance.

### Hookup

Now a few words in regard to the hookup of power and engine:

It must be borne in mind that a chain is no stronger than its weakest link. Neither will a power pull more load than may be transmitted to it by the prime mover through the belt. Complaints sometimes come in that the operator has a 20-horsepower engine hooked to a power and that he does not need that much power and yet his power will not do the work. Assuming that the engine is in good condition, and that the power is somewhere near balance, the answer to his problem lies in the belt.

Good grade oil country belting will transmit 1 horsepower per inch width for every 350 feet per minute of belt speed. It is at once obvious that a belt of sufficient width should be used if the power of the prime mover is to be used. Too narrow belting also is costly in that in trying to carry the extra horsepower, imposed its fabric soon breaks down and it is destroyed. Wide belts always might be a good slogan for the oil industry when it comes to transmission problems.

Power manufacturers know accurately the loads that may be imposed upon their powers. They therefore equip them with the proper diameter and face pulley so that it will function with the best economy. They also recommend the proper size prime mover and attempts to overpower the pumping unit will result in shorter life and unsatisfactory service. Similarly underpowering the power will result in lost production and poor economy. This underpowering will come from either too small an engine or too narrow a belt.

Proper lubrication of a power and engine are also vital factors in performance. In an age of automobiles, it seems almost ridiculous to mention such items as lubrication and cleanliness for machinery, but the heavy machinery of the oil industry requires a proportionate amount of attention to that of other industries and, everything considered, far less than that of an automobile. Careful inspection should be made of all oil passages to see that they are open and allow easy passage of the lubricating oil. Machinery should be well housed to protect it from blowing sand, leaves and other materials which tend to clog the lines.

### Proper Powers

The choice of the proper pumping power to suit one's needs is important. Manufacturers offer several types which may be classified as belt-driven geared powers, direct connected geared powers, and bandwheel powers.

For operation of loads up to approximately 30 horsepower where normal balance conditions prevail the geared powers may be safely used. However, between the 20 and 30-horsepower limits only the heavy duty types should be applied. Even at 25 horsepower the choice of a bandwheel may be more advisable.

In any kind of geared power it is recognized that the load per gear tooth is the important item. This load is subject to sudden shocks and sudden reversals of motion; in simple language it is continually hammered upon by the shock loads of the wells, for it is largely the wells, and not the prime mover, which determine the load. Any kind of gear system is quite rigid and inflexible and has little or no tendency to absorb these shocks. Therefore, when the load has become such that engines of 25 horsepower or more are required, it is advisable to consider the bandwheel power.

The operator may well ask the question: "Can you not build me a satisfactory geared power?"; and we can reply: "Yes, if you can afford to buy it as compared with a similar capacity bandwheel."

At present it is only an occasional operator who has need for the heavier machinery, but with the advent of repressuring, many of the aspects of previous operations will change.

That the geared power, within the above specifications, has performed very satisfactorily cannot be denied. When properly installed and balanced, it will, with proper attention, give many years of useful service.

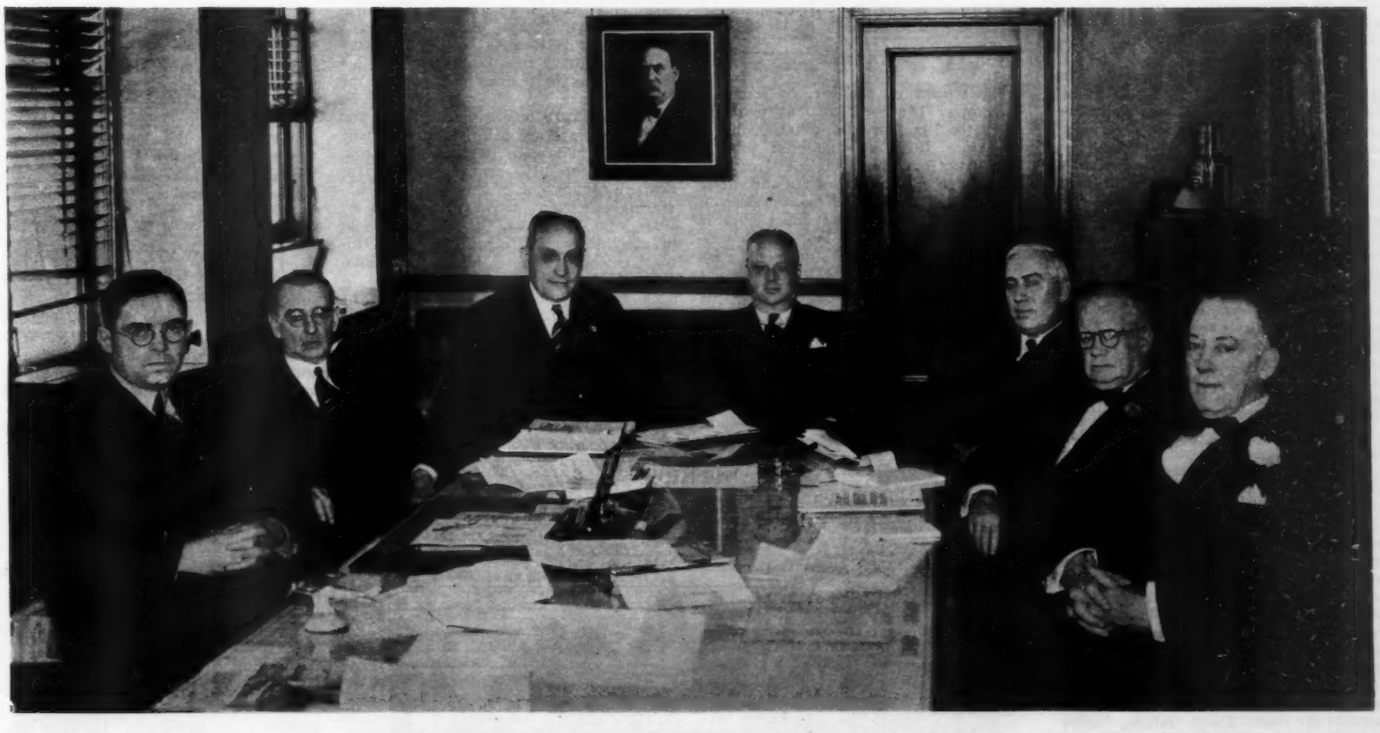
### Most Efficient Operation

It might now be in order to mention a few things relative to the best and most efficient operation of gas or oil engines. The manufacturer's instruction book generally gives all details for the adjustment of the various parts of the engine such as valves, timing, and bearings. Proper and effective cooling of an engine is vital to its life and operation and is second only to the matter of lubrication.

While the engine is in operation it should at all times be provided with an adequate supply of cooling water. In gas engines the temperature of the discharge water is not of great importance except that it be kept under 120° F. as much as possible. In the Diesel engines, the water will have to be carried higher ranging from 120 to 140° F. In either case, the flow of the water is the vital issue.

Two systems are in use at present on oil country engines for cooling the water. The first and best method is that of circulating the water from a tank or other source, by means of a pump. This is the most effective method. In this hookup, the return, when discharging into a tank, may be above the water level in the tank. In the second or thermo-syphon method, the discharge of the water must be below the water level to assure the proper circulation. If this is not done, the cylinder becomes so hot before the complete circulation of the water can be set up that the water immediately becomes steam on contact with the hot walls and minute bubbles form over the entire cooling surface. Under these bubbles is hot water and air which prevents the actual cooling water from reaching the metal and functioning properly in cooling it. Violent ebulition or belching takes place and the water is ejected in spurts by the steam. This is very undesirable and may be avoided by

## Officers and Directors of the Barnsdall Corporation



*Following an inspection trip of properties in Southern Louisiana and Mid-Continent points, officers and directors of the Barnsdall Corp. held a meeting in the Tulsa offices of the company. They then continued their inspection of properties located north of Tulsa and visited the Chicago offices of the company. From left to right, the officials are: D. L. Frawley, vice president and director; J. T. Furlong, director; E. B. Reeser, president; Wm. Dewey Loucks, chairman of the board; Jas. A. Dunn, vice president and director: R. A. Broomfield, executive vice president and director; and George D. Locke, vice president and director*

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placing the outlet pipe beneath the top surface of the water in the tank.

All engines are provided with handhole plates for cleaning out the water jackets. This should be done regularly to prevent clogging and crusting with consequent reduction of the water cooling areas and eventual cracking of the cylinder.

The lubrication of an internal combustion engine is of the utmost importance. The manufacturer's specifications on the lubricating oil should be carefully followed. In general under light loads, an oil of S.A.E. No. 20 is sufficient. For heavier loads on gas engines, and light loads on Diesel engines, an S.A.E. No. 30 should be used. For heavy loads on Diesel engines, an S.A.E. No. 40 or 50 should be used. All these oils should be of the best grade and of low Conradson carbon content.

### Loss of Power

When an engine begins to lose power, it may be due to one of the following reasons:

Trouble: Loss of compression due to worn rings or cylinder.

Detection: In this case, the trouble can generally be detected by hearing the blowing by of the compression as the engine is being shut down.

Remedy: New rings and possibly new cylinder required.

Trouble: Loss of compression due to leaky valves on four-cycle engine.

Detection: The trouble generally indicates itself by extreme heating of the intake valve.

Remedy: The remedy for this condition is either in the adjustment of the inlet and exhaust valves or in regrinding or refacing them.

Trouble: Loss of compression due to gasket failures.

Detection: This can be detected by hearing the compression blowing through or feeling along the gasket joint.

Remedy: Tighten the nuts holding the parts separated by the gasket or replace gasket.

Trouble: Loss of power due to water entering the cylinder.

Detection: When this is due to a loose combustion head, it may be detected by the surging of the outlet water on the power stroke of the engine. When it is due to a leak through the cylinder itself, it may sometimes be detected by a film of water in the cylinder or by a wet spark plug.

Remedy: To remedy the first trouble, tightening the combustion head or replacing the gasket will generally be enough. The second difficulty may require a new cylinder.

Trouble: Loss of power due to faulty exhaust connections or to the exhaust line clogging or the cylinder ports carboning shut.

Detection: This may be detected by a sluggish action of the engine and by hard starting.

Remedy: The exhaust line should be as short as possible and freed from any foreign matter that has collected in it. If there is a muffler on it, this muffler should be kept clean and open. The exhaust ports should be examined and cleaned if found to be plugged with carbon.

Trouble: Loss of power due to conditions in the gas supply.

Detection: Sluggish performance, hard starting and erratic operation generally indicate faulty gas supply.

Remedy: Regulators and gasometers should be kept clean and adjusted so that they are free to respond to any changes in pressure or demand of gas from the engine. Lines to the engine should be of ample size and free from inside scale and dirt. The pressure of the gas entering the engine should be kept under a half pound. In areas under repressuring by air or gas there are radical changes in the heating value of the gas within short periods of time. Large mixing tanks should be provided and the engine fed from these through the regulator and gasometer.

Trouble: Loss of power due to faulty timing of magneto or of valves.

Detection: This may be detected by checking these timings against the manufacturer's instructions.

Remedy: They should be set according to the above instructions.

Trouble: Loss of power due to choked air intake.

Detection: Sluggish engine, will not carry load and shuts down.

Remedy: Examine air intake pipe. This pipe should be kept open and should be protected by a screen on the outside end.

Trouble: Loss of power due to bad spark plug.

Detection: Engine is weak, misses, will not pick up load.

Remedy: Clean or renew plug.

### Care in Alignment

Care should be given to keep the outer bearing always aligned. The journal bearings, rod head bearings, and crosshead bearings should at all times be kept snug and in adjustment. They should be inspected regularly to assure that they are in good condition. Regular inspection of the whole engine will give many dividends in doing away with loss from breakage, wear, and shutdown time. While down for inspection the engine should be cleaned so that it is free from dirt and excess oil.

The block also should be kept clean and the foundation bolts nuts always kept tight.

While these matters of care and attention might be elaborated on to much advantage, the essential features have been touched. Attention to them regularly will be equivalent to several barrels increased production.

I have not tried to give any details in regard to the operation of the Diesel engine as it would need considerable space of itself. I do wish to say, however, that there is nothing about the several oil country Diesels being offered by the various manufacturers which is so radically different from the gas engine that any good operator cannot operate it as readily as he has his gas engine.

### Diesel Engines

With the mention of the Diesel engine, we come to a prime mover which will probably be the vital link in the new recovery methods. The work already done has proven the quick depletion of the gas supply and unless the operator is assured of a source of supply from a gas sand outside his repressuring area, he must look to the Diesel as his most economical source of power.

If he must purchase gas from 50 to 60 cents per 1,000, the operation of the gas engine is out of the question. In order to equal the Diesel engine when paying 6 cents for fuel oil, gas would have to be purchased at slightly under 30 cents per 1,000 and electricity under half a cent per K.W.

Diesel engines built by several manufacturers and which have been in operation in the Bradford and Bolivar Fields for the past several years, have shown their economy in that the total operating cost has been slightly under 4 mills per horsepower hour. These are not the manufacturer's figures, but those of the companies owning and operating the engines. To equal this performance, electricity would have to be bought for under one-half cent per K.W. and gas for about 25 cents.

### Repressuring Problems

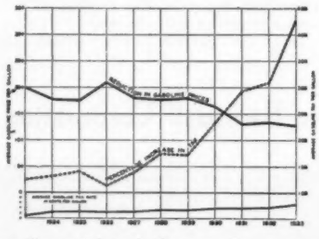
To meet the somewhat complex problems of repressuring, the manufacturers of oil country equipment have designed and continue to improve a wide range of machinery, including engines, pumping powers, compressors, water pumps, and all the vast field of accessory equipment necessary to the efficient operation of oil production. Into these products goes a varied classification of material and workmanship. Varied as this may be, each manufacturer sells it honestly for what it is. To every buyer is available the full specifications of what he is purchasing. To say that any manufacturer disregards profits and attempts to just get by would be foolhardy. Producer or manufacturer each must make some profit to justify existence. But in the industries supplying the oil industry, as in no other, I believe the matter of service to the user and the manufacture of quality products is of paramount importance.

When I say that under an economic policy, vastly changed since Drake drilled the first well 75 years ago, the manufacturers of oil country equipment still stand by their time-honored tradition of quality in their products and service to the user, I believe that I speak for all who are engaged in serving this most vital of all our basic industries.

# Graphic Demonstration of Comparative Gasoline Prices and Tax on Gasoline

The Federal Government in 1933 collected $181,000,000 on gasoline alone. Last year, for every dollar drivers spent for motor fuel they added 44 cents for taxes. The average tax per gallon, according to The Lamp, was more than the wholesale price of gasoline at the door of the refinery. This explains in part the fact that there were 13 per cent fewer motor cars registered in this country last year than there were in 1929.

This is a sizeable contribution for the motorist to make, but it is only about half the story. Car owners pay an annual registration fee, based in some states



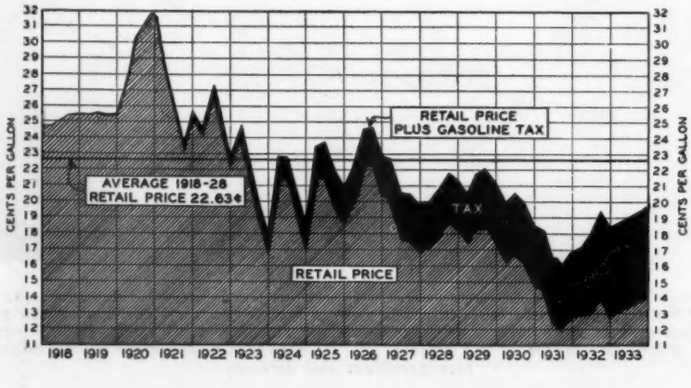
on the weight of the car, in some on horsepower. The total amount paid for car plates has run over $300,000,000 a year since 1927. The motorist pays a Federal tax on lubricating oil, 4 cents a gallon, another tax on his tires and tubes, on new cars, trucks and motorcycles, on parts and accessories. At one time this produced $156,000,000, but the depression reduced the amount until last year it was down to $76,000,000. Personal property and municipal assessments on cars brought in $125,000,000.

All told, the automobiles turned in to city, state and Federal governments last year a total of $1,170,000,000 in taxes. That was more than the entire value of all new motor cars and trucks sold in this country last year or the year before.

With the land honeycombed with broad highways and the tax increased fivefold over the amount originally contemplated, it was no longer necessary to spend all the proceeds on the construction and repair of the highways. Instead of reducing the tax there began to develop the practice of diverting some of the proceeds to other uses. At first this was done circumspectly and the expenditures charged to the roads. Later, and more particularly since the states have had to appropriate money for the unemployed, the motorist's money has frankly been divided at the discretion of the states. In 1932 more than $50,000,000 out of gasoline taxes were expended in ways not connected with the construction or maintenance of traffic lanes. Last year four times as much was so used.

The question naturally arises as to why the motorist, who for the most part is a man with an exceedingly modest income, has not been more vocal in his complaints at the way in which his legislators have "taken him for a ride." The answer is that he has been quieted by the discovery that year after year his gasoline has cost him less despite the increased tax.

Thus, in 1919 before the first tax was put on, the average price of gasoline was 25 cents a gallon. In 1933, including tax, it was about 19½ cents a gallon. Increased supplies of crude oil, higher operating efficiency on the part of the refiner who more than doubled the yield of gasoline per barrel of crude, and intensive competition on the part of sellers lowered the price of the motor fuel to such a level that even the addition of state and Federal taxes left it the cheapest commodity in general use. Had conditions remained as they were at the end of the war, the country would be paying an average price of about 30 cents a gallon today and complaining loudly about the motorists' tax burden.




## TIDE WATER INCOME

Tide Water Associated Oil Co. and subsidiaries report for the quarter ended March 31 net income of $1,430,962 after all charges, reserves and Federal taxes, equal, after deducting an amount equivalent to the quarterly dividend on the 636,222 shares of the 6 per cent cumulative preferred stock to 8 cents a share on the 5,627,577 common shares outstanding. This compares with a net deficit of $1,238,728 reported for the first quarter of 1933.

Tide Water Oil Co. reports for the quarter ended March 31, a net profit of $1,011,969 after all charges, reserves and Federal taxes, equal after preferred dividend requirements on the 196,246 shares of its 5 per cent preferred stock to 35 cents a share on the 2,191,823 common shares outstanding. This compares with a net loss of $1,164,582, reported for the corresponding period of 1933.

Associated Oil Co. reports for the first quarter a net profit of $718,208 after all charges and reserves, equal to 31 cents a share on the 2,290,412 capital shares outstanding. This compares with a net profit of $85,690, or 4 cents a share in the corresponding quarter of 1933.

# Federal Control of Quotas in Commerce Urged Rather Than Control of Crude Production

By AMOS L. BEATY
Chairman of the Planning and Coordination Committee*

Many lawyers entertain the opinion that Congress has power to control the production of petroleum on private property within the states. Their theory seems to be (1) that Congress may exercise such control as a conservation measure for the common defense and general welfare or under what is sometimes called the "war power" and (2) that since excessive production injuriously affects interstate commerce Congress may protect that commerce by controlling production. The purpose of this paper is to invite some straight thinking and constructive action on this very important subject and to advocate Federal legislation for the establishment of quotas in commerce rather than direct Federal control of production.

At the outset reference must be made to the fact that there are no decisions which sustain either of the two propositions advanced by the advocates of Federal control of production and that there are many decisions which it will be necessary for the Supreme Court to distinguish or overrule if such control is sustained. So far as their first proposition is concerned it should be a sufficient answer to refer to the argument filed by Chief Justice Hughes with the Federal Oil Conservation Board in 1926, when he was in the practice of law, and to the authorities cited by him. He also showed that the production of oil is a matter of state concern and that its regulation is not for Congress. And to what he said may be added the comment, having reference to enactments under the commerce clause, that commerce is trade, or trading; that an operation which does not involve the trading element is not commerce, much less interstate commerce; that mining is not commerce and neither is the production of petroleum; and that commerce begins where manufacture ends (Utah Power & Light Case 286 U. S. 165; Oliver Iron Mining Co. vs. Lord 266 U. S. 171); whereas there are no obstacles to legislation, no decisions to distinguish or overrule, if Congress proceeds by the commerce route and regulates movements in commerce, leaving production and manufacture to the states, or, as a practical matter, to take care of themselves. And this is true whether the legislation is of a new and direct type or whether it is through a code under National Industrial Recovery Act.

### Federal Legislation Needed

Federal legislation of some kind is undoubtedly essential. For several years a kind of control has prevailed under state authority. Most of the states in which large production occurs have laws and commissions under which production can be limited to market demand and equitable proration can be enforced. But the states do not agree on their respective shares of the market, some contending for more than others are willing to concede and the commissions are urged on by operators in the states. Congressional legislation to authorize state compacts was lost. Perhaps some of the states would have declined to enter into compacts. At any rate, state control has proven unsuccessful and the industry must look to Congress for relief or else suffer until nature works a cure.

The problem of the petroleum industry is much more difficult than that of other natural resource industries, because of the fact that if one operator in a pool of divided ownership produces more than his share of the oil he drains his neighbors, unless they in turn increase their production correspondingly, and any excess of this kind quickly spreads over the entire pool. With operations thus circumstanced, and with potential production such that the mere turning of valves would cause production to exceed national demand several times over for months if not years, the necessity for effective control of some kind is apparent.

### Control or Chaos

It is either control or chaos. Overproduction, glutted markets and dumping do not benefit the consumer in a legitimate way, and such practices bring distress to millions of investors and workers. Involved in the economics of the situation is also the preservation of some 300,000 wells of small but settled production and several billion barrels of reserves that go with them.

The Federal law should designate a department, board or agency to determine periodically crude oil supply and demand, and, in times of overproduction, to establish quotas to move in commerce. States, pools and properties would be given quotas, as would also the owners of stored oil and importers, and movements in commerce (interstate, intrastate or foreign) by purchase, sale, exchange, consignment or otherwise, in excess of quotas, would be prohibited. This would mean isolation and embargo for excess production, which in turn would control production, as no operator would strive to produce oil which he could not dispose of. But this control of production would be incidental or secondary and not primary.

There can be no doubt of the power of Congress, directly or through such agencies as it may designate, to limit the quantity of oil that may move in interstate commerce. Such volumetric control is strictly within the power to regulate interstate commerce, and at times like these its exercise would be most wholesome. Restriction of surpluses, prevention of dumping, and stabilization of markets are of vital importance. But if Congress should enact a law for quotas in interstate commerce, and leave intrastate commerce free, the practical results would be negligible. It must be remembered that it is not commerce for one to ship to one's self at one's own warehouse for storage. Nor would it be interstate commerce if the movement were interstate. Accordingly, oil producers might quickly adjust their operations so as to circumvent an enactment of that kind. And if the restriction should apply only to crude oil, crude would be refined in the states of overproduction and the products would continue to flood all markets. There would be no hope in restrictions applicable strictly and solely to interstate movements, unless quotas for refiners as well as for producers should be established, and even then the plan would be incomplete and unworkable.

### Must Include Intrastate

An immediate and inevitable result would be intensified competition and lower prices in the large producing states, which as an economic matter would soon cut off all movements into these states and thus seriously affect that particular interstate commerce. Notwithstanding the great production of Texas and Oklahoma, there are at all times substantial movements into each of these states. Moreover, the mere fact that an act of Congress would injure local commerce in a particular state would be a sufficient argument why Congress should shape its legislation to avoid that result. Quotas in interstate commerce, with no incidental control over intrastate commerce, would present the same difficulties that loomed large in the regulation of rail rates under the Interstate Commerce Act until the courts came to the rescue. And the plan is worth championing only if quotas can be established and made applicable regardless of whether the commerce is interstate, istrastate or foreign.

Probably 90 per cent of the petroleum produced in the United States moves across state lines at some stage or in some form between its production from the earth and the use of its products by the consumer. Much of it goes from the wells into pipe lines and thence to refineries in distant states and foreign countries. A very substantial part is refined within the state of production, and then, through pipe lines, ships and cars, the products are moved to markets elsewhere. These products are frequently and successively reshipped in commerce from place to place across state lines. And it is easy to see that all of this is interstate or foreign commerce. But there is some consumption in the state where manufacture occurs and some in the state where the crude is produced. Likewise products come to rest and become part of the mass of property in the state of consumption before they are actually consumed. Under these circumstances it is apparent that both interstate and intrastate commerce are involved. This is, in fact, a field in which are intermingled all kinds of commerce.

### Affects All

In theory, Congress regulates interstate and foreign commerce, while intrastate commerce is regulated by the states. The case is simple when it involves a small industry which has no interstate or foreign ramifications, and in such case the power of the state is final. But in this industry, where a large part of the business is interstate or foreign, and that portion which is intrastate directly affects the interstate and foreign portions, the question of authority to regulate becomes one which will admit of only one solution, namely, regulation by Congress of the interstate and foreign portions, which carries with it the prevention of anything in intrastate commerce which would tend to thwart such regulation. It is obvious that if Congress should undertake to regulate interstate and foreign commerce in petroleum by limiting the volume in which it may move, its effort would be frustrated if intrastate commerce in petroleum should remain uncontrolled. This is true in the very nature of things. It is true because all commerce is competitive, and competition within a state would result in state domination, thus defeating the aim of Congress.

In Minnesota Rate Cases, 230, U. S. 352, and later in the Shreveport Case, 234, U. S. 342, questions arose as to the power of the Interstate Commerce Commission to prevent the application of intrastate rates, made under state authority, which would conflict with those approved or promulgated by the commission for interstate traffic, and which would work to the detriment of carriers if they were required to observe them. It was held that the commission had the power, though it meant virtual control of intrastate rates. It is not considered necessary to review the decisions at length, and it will suffice for the purpose of these remarks to quote a summary from Chief Justice Taft, who delivered the opinion of the court in the more recent case of Railroad Commission of Wisconsin vs. C.B.&Q. Railroad, 257 U. S. 563. Said the Chief Justice:

"Commerce is a unit and does not regard state lines, and while, under the Constitution, interstate and intrastate commerce are ordinarily subject to regulation by different sovereignties, yet when they are so mingled together that the supreme authority, the Nation, cannot exercise complete effective control over interstate commerce without incidental regulation of intrastate commerce, such incidental regulation is not an invasion of state authority or a violation of the proviso."

### Way Is Clear

The way is thus clear, provided we commence at the inception of commerce in oil, that is, its movement into commerce. In truth the path is marked at every step. The rate cases are conclusive of the principle that quotas can be made to govern all movements regardless of whether the commerce is interstate, intrastate or foreign. In other words, all distinctions in that respect may be brushed aside if this is found necessary in order to render regulation effective and fair. Under this plan an operator would be given a quota, and that quota would be all inclusive. It would include his share in commerce, whether interstate, intrastate or foreign.

Commerce, in the language of Chief Justice Taft, would be treated as a unit, and each participant would have his quota in the unit. This in practice would mean simply that producers in fields that should be prorated would be given quotas in commerce for their output, and these quotas would be the same as their proper production quotas. Theoretically, producers would be free to bring out their oil and store it. But they would not do this to any great extent. The inhibition against movement of surpluses over quotas in any kind of commerce would be effective in practice to restrict production. The isolation and embargo of surpluses would quickly bring a halt. The governing authority could require surpluses sealed if necessary to prevent their movement in commerce. Nor would companies having empty storage be in position to produce their oil and drain the properties of neighbors who happened to be without storage. The states prevent things of that kind. Moreover, the embargo would apply indefinitely and the oil would be worthless in the hands of the pirate. The danger of oil slipping from embargo into commerce contrary to law would be much less than the "hot oil" menace when the sole effort is to control production, because movements in commerce are more in the open.

### Constitutional Difference

To some the difference between regulating production and regulating commerce in the thing produced may seem shadowy, but it is not so from a constitutional standpoint. It is not so when we must consider what the Supreme Court has said and repeated many times, namely, production is not commerce. This distinction is, indeed, so important that it must be stressed. It cannot be repeated too often. If there were no way

*Before the Round Table Meeting, Chamber of Commerce of the United States.

to stop the flood of oil, except by controlling production in the states, a strong argument might be made to the effect that the decisions heretofore rendered do not apply. It could be urged with much force that while it is true, as the court has often stated, that mining is not commerce, nevertheless excessive mining affects commerce and can be restrained under congressional authority if interstate commerce is involved.

But the fact is that oil does not necessarily go into commerce at the moment of its production. Some of it does, to be sure, and to that extent quotas in commerce would be tantamount to production control, but an important part of the oil produced is not sold at the well. The larger producing companies first take theirs into storage or refine it. To say that the only way to protect interstate commerce against surpluses of oil is by limiting production in the states is to overlook the power to fix quotas in commerce. If Congress and its agencies have the power to control production they can control the drilling of wells. And it is only one additional step to the control of leasing. There must be some critical point, and logically that point is at the beginning of commerce. Especially is this true if regulation at the inception of commerce would be an effective remedy.

To illustrate the dilemma which might ensue from an effort under Federal authority to control production, let us suppose the State of Texas, for example, should invite producers to bring out oil in excess of Federal production quotas and hold it in bond for a year. Conceivably the state might do this and even offer state aid in carrying it. It might adopt such policy in order to obtain more tax money or to insure supplies for its institutions, and producers might and probably would accept the invitation. Then where would the Federal authority stand? On what principle could it say no? It could not properly oppose such course, except on the theory that Congress can ignore the states and constitute itself the sole conservator of the nation.

### Straight at Objective

When Congress through a Federal agency undertakes to control production it is regulating production, not commerce. True, the effect upon commerce may be profound, but that is secondary; the primary effect is upon production. As already indicated, the opposite sequence should prevail. Production might be restricted to consumer demand and commerce remain demoralized. This statement is made in view of the large stocks in storage. But in deciding whether Congress has transcended its power the courts will look at the real and usually the primary purpose of Congress, as witness the Child Labor Case. If the real or primary purpose is to interfere in local or state affairs, a cloak of interstate color is no protection. On the other hand, if Congress drives straight at an objective within its sphere, incidental or secondary effects may be what they will. To restrict production as a means of improving commerce is laying too deep a hold when the power extends only to the regulation of commerce. And the real object in this movement is to improve commerce. If commerce were what it should be no one would worry about production. The real or primary purpose, therefore, is sound from a Federal standpoint. Then why not go straight at it? Why should Congress do something which is not sanctioned by the Constitution in order indirectly to accomplish that which is sanctioned? Why the circuity?

### Front Door Open

Quotas in commerce will incidentally control production, just as control of production, if permissible, would similarly affect commerce. But both of these are not Federal functions; one is state. And if Congress or a Federal agency tries to control production it will be entering by the rear when the front door it open. Moreover, such action would be arbitrary. Thus, if Congress, for the purpose of preventing the interstate shipment of game illegally killed, had prohibited the interstate shipment of meat of every kind, it would be clear that its action was arbitrary and without proper regulation to the end in view. And the same could be said of a state statute for the destruction of persons afflicted with hereditary insanity when sterlization would answer the purpose. In such cases it would be said that the remedy though effective extended too far and became arbitrary. On the same principle there would be room for a good argument against Congress dealing with oil production, even if it had the express power, for it could be shown that regulation of commerce in oil is sufficient. Here, however, we have the additional fact that Congress has no express power to deal with production, and its right to do so has been consistently denied by the courts. And since Congress must proceed under the commerce clause it should deal with commerce and not production.

Naturally the mind reaches out to inquire whether if quotas in commerce should fail as a practical measure the industry would be helpless. It could fail only on one ground, evasion and failure of enforcement. But enforcement of quotas in commerce would be as easy as enforcement of production quotas. Indeed it would be easier. Certainly it can not be said in advance of trial that it would fail. And it would be a simple process to provide in the law that upon a practical demonstration that quotas in commerce can not be enforced production quotas may be established. We would then be in the attitude of having proceeded step by step with due regard to fundamental law. The dernier resort would be reached after the efficacy of all others had been affirmatively disproven. Logic and reason dictate this course. Due regard for what the courts have said impels it.

### Coronado Case

There are numerous Supreme Court decisions under the Federal antitrust laws establishing the doctrine that combinations and conspiracies in restraint of trade, though made in the course of operations which are strictly intrastate, may have such effect on interstate commerce as to constitute a violation of the Federal laws. These cases are being cited to support the theory that Congress may regulate the production of oil. But they seem inapplicable. In the enactment of antitrust laws Congress was really and truly dealing with interstate commerce. The protection of that commerce was the real and primary object.

Take the Coronado Coal Co. Case: Congress had enacted the law against combinations and conspiracies in restraint of interstate trade. A combination of mine workers interfered with such trade, and the court held that the law was violated. But suppose Congress, instead of passing the Sherman law, had enacted broadly that mine workers could not combine: Would the act have stood the test? And would it have been sustained even upon proof in the particular case that interstate commerce was affected? Certainly not. It would have been plain that Congress had gone too far, and the entire act would have fallen. Exactly the same observation might be made of a dozen or fifty other cases involving interferences with interstate commerce, including the Poultry Case recently decided.

It has been suggested that the Stock Yards Case and the Chicago Board of Trade Case support the regulation of practices which affect interstate commerce, and therefore constitute precedent for the contention that the regulation need not be of the commerce itself. But obviously in these cases there was no way to reach the evil against which the legislation was directed except by dealing with the specific evil directly. The philosophy was similar to that employed in the regulation of carriers as instruments of interstate commerce. In neither case was there an opportunity or possibility of reaching the evil through a regulation of the commerce itself rather than of the thing affecting the commerce. The two cases would have been more in point if the effort of Congress had been to regulate stock raising in the one and grain culture in the other, but the decisions might have been different.

Friends of proration and curtailment have gone too far in their demands for legislation running counter to all judicial thinking to date, when nothing of that kind is necessary. Why should Congress be asked to invade the state sphere and restrict production, restrict drilling, restrict leasing, and deal with field operations, when none of that is necessary? Why should it be done when the effect will be to throw the measure in court and thus delay a real remedy for months or years? The situation is too serious to permit the testing of debatable theories or any dallying. And this applies particularly to their war-power theory. Perhaps it is natural that earnest forward-thinking men, seeing the damage being wrought, should become crusaders. Nevertheless, this government must remain one of laws or it will cease to be a government. And the law, while not an exact science, is a thing of reason and consistency. The crusaders admit this but insist the their theory must prevail in consequence. A resort to reason, therefore, is quite in order.

Their argument is that because there is so much oil Congress should anticipate a shortage. Identically the same argument was made and the same frantic warnings were sounded eight years ago. Since then we have taken more than 7,000,000,000 bbls. of oil from the ground and the unproduced quantity in sight has almost doubled. Our billion-acre reserve is still a billion-acre reserve. Shale and coal, as sources of motor fuel virtually unlimited, remain untouched. Alcohol is clamoring for a place in motor fuel supply and the sources of alcohol are not in the wasting category. In short, it should be sufficient on this point to quote the second conclusion of the Committee of Eleven as follows:

"It is reasonable to assume that a sufficient supply of oil will be available for national defense and for essential uses in the United States beyond the time when science will limit the demand by developing more efficient use of, or substitutes for oil or will displace its use as a source of power by harnessing a natural energy."

### Waste Not Serious

But are we really profligate and wasteful of this natural resource? And if so, to what extent? There is moderate waste in producing excessive quantities of oil. It results from evaporation and exposure to the hazard of fire, though much improvement has been made in types of storage in recent years. This waste, however, is not so serious as some may believe. It is inconsequential compared with the injury to commerce and those things such as unemployment and general distress which come with impaired commerce and low prices. Suppose our production of crude oil this year should be 50,000,000 bbls. more than required for customary uses: The actual physical loss from premature extraction and storage of 50,000,000 bbls. might be 3,000,000 bbls. in the year, which would be a very small matter contrasted with the injury inflicted upon the country as a result of low prices and continued depression. And the temptation to overconsume when there is overproduction is generally overestimated. For example, if we had a demand for 400,000,000 bbls. of motor fuel, the production of 410,000,000 bbls. does not mean that the latter quantity is consumed; it means rather that 10,000,000 bbls. are carried over and that, due to the constant pressure of this surplus upon the markets, prices are unremunerative. True, there is some drift into inferior uses, especially where fuel oil supplants coal, but the extent of this also is generally overestimated, and it is doubtful whether any oversupply of petroleum ever increased actual consumption in any year by as many barrels as single companies have lost in dollars in the last three years. Certainly the forced consumption is of minor consequence compared with the wreck of prices.

## Oil Man From Mexico Is Back Home

*Reading from left to right the above group are: M. L. Cashion, drilling engineer, Gulf Production Co., Houston; T. R. Bibee, drilling superintendent of the Mexican Gulf Oil Co., with headquarters at Tampico, Tamps, Mexico; R. T. Todd, field representative of the Byron Jackson Co., Houston; and Marshall Moore, field representative of the Byron Jackson Co., East Texas and South Louisiana*

# Use of Drill Pipe and Casing With Flush Joints Found to Have Many Special Advantages

By W. V. VIETTI
The Texas Co., Houston, Tex.

Flush joint pipe can be used today to supplant collared pipe for many kinds of work with about the same factor of safety. The flush joint will not replace the collared joint unless proven more economical from the operating point of view. The flush joints offered today comprise an interesting study in themselves but this paper will be limited largely to the use of the flush joint in the field with very little emphasis on the type of flush joint which may or may not prove most desirable. The flush joint will undoubtedly find its place in the industry. Numerous advantages to be derived by the use of flush joint pipe may be postulated. Some of these advantages have been demonstrated in the field and the others are only partly realized or have not been tested in actual field work.

Flush joint drill pipe can be obtained in the internal or the external flush type. The internal flush point pipe is upset externally and is now offered to the industry with the tool joint threaded out of the upset thus eliminating the threaded joints from the pipe to the tool joint. The external diameter at the upset is equal to the average tool joint diameter. The internal diameter is, of course, uniform through the pipe and joint. The result is a drill pipe of lighter weight for equivalent joint strength and conversely, an increased strength for given size of drill pipe. Pump pressures required for circulation are decreased due to the more uniform and larger internal diameter and more uniform annular space in the well. These characteristics are desirable in rotary drill pipe and become increasingly important as wells are drilled deeper, since the size of the rig need not then be increased proportionately. Clearances are limited by the oil string in the deepening of old producing wells. It is believed that internal flush drill pipe will find its first thorough testing in the Mid-Continent in either deepenng jobs, deep drilling, or in exploratory work where lightness and strength are of equal importance.

Internal flush drill pipe permits the use of a larger wire line core barrel. More volume of core per run is obtained and this is desirable in wildcat drilling. Wire line collapsible bits can be larger per size of drill pipe; and internal flush is much more suitable for this type of drilling than either our present drill pipe or casing.

### Advantage in Joint Strength

The external flush drill pipe is upset internally to provide sufficient strength at the joint. Advantage in greater joint strength is claimed for this pipe over customary drill pipe largely because a greater amount of metal is left at the base of the first perfect thread. The average rupture in drill pipe subjected to hard usage is, of course, not at the tool joint but at the drill pipe thread. This thread is eliminated in the flush joint drill pipe. Flush joint drill pipe can be delivered in certain localities at a cost less than tool joint drill pipe, due no doubt to the decrease in number of threaded joints connecting singles from three to two or one threaded joint. Flush joint drill pipe of the external type has in effect two tool joints as the pipe joints can be reversed and the other end of the pipe used for making and breaking at the double pin coupling. This should serve to increase the effective life of the drill pipe.

External flush joint drill pipe used in combination with pressure equipment offers the best blowout preventer system yet used in the oil industry. Present day practice places reliance upon mud; upon the operator's estimate as to what the characteristics of the mud should be; and upon the driller's judgment as to whether he has drilled any gas or oil sands; as to whether he should circulate his mud before starting out of the hole; as to whether mud should be circulated after a few thribbles have been pulled; as to how fast he should come out of the hole; and upon a myriad number of known and unknown factors which confront every operator and driller. Add to this the chance that the blowout preventers are not working; that they crush the drill pipe when slammed shut; that they close on a tool joint and we have a few more of the factors contributing to blowouts.

### Use of Mud

Gulf Coast drilling requires the use of a semicolloidal or colloidal mud. Excellent progress has been made in mud treatment to regulate weight, viscosity, gelling time, and gel strength. But no progress can be made in predicting what effect the next 10 or 30 feet of shale, sand, or lime is going to have on the mud. Excellent mud will change quickly upon penetrating certain shale bodies to a mud which gels rapidly to a high strength gel. The mud is then dangerous as it will gel each time the drill pipe is stopped to set back a thribble. The gelled mud clings to the pipe each time it is started out of the well and acts as a swab to drop the bottom hole pressure exerted by the mud column. This in turn will pull the walls of the hole in to cause heaving, or the entry of gas, oil, and water from the sands. Flush joint drill pipe should have a lessened swabbing action compared to tool joint drill pipe and may prove much more desirable. The practice of spudding should also be less harmful with flush joint pipe and may not be as necessary as there are no collars for shale and cuttings to lodge against. There are, in addition, no collars to tear the mud cake off the walls.

A packer can be installed on a well to be drilled with flush joint pipe and left in place to seal the space between drill pipe and surface casing when going in, when coming out, or while drilling. Any blow which may occur is thus immediately diverted to the mud lines which are equipped with proper valves and chokes to control the flow. The dangers incident to blowouts are thus lessened considerably. The time to stop a blowout is instantaneous with the first kick of fluid and not after a stream of gas, oil, water, and sand surges through the rotary table, wrecking the rig, cutting out equipment, and making it almost impossible for a drilling crew to work. It is also possible to come out of and go back into a well under pressure by use of the lubricator space between packer and master valve, which should be ample to care for the length of the bit and drill collar.

Flush joint drill pipe possesses disadvantages, some of which may prove serious. Flush joint is not readily available and some delay occurs when additional pipe is required. Standard subs are not available on short notice, but these disadvantages will be remedied if and when flush joint becomes popular.

### Tool Joints

Tool joints are claimed to serve as hole guides and as reamers to keep a hole from walling up too extensively. Flush joint does not possess these characteristics, but on the other hand will not tear a mud cake off the walls of the hole which is assumed to occur with tool joints. It is also postulated that flush joint will bury itself into the wall of a hole if there is any kink in the well. These kinks, however slight, are always present and, except in very straight holes, this may be a real hazard in the use of flush joint. No instances of this type have come to the attention of the writer unless a recent freezing of flush joint in a 7-degree hole was due to the pipe burying itself and was not due to the heaving in of shallow sands which had been charged with high pressure gas from deeper sands.

Tool joints are claimed to be beneficial in helping to wall up a hole by the rotary wiping action and in keeping the mud cake from becoming too thick by a reaming action. This would be lacking in flush joint except for the wiping of the walls by the pipe.

All casing is, of course, internal flush so, naturally, flush joint casing refers to internal and external flush. Flush joint casing can be classified into square thread, "V" thread, collared flush, and collared semiflush. A discussion as to the desirable type of joint would involve the comparison of square threads to "V" threads and the comparison of a box and pin joint (single) to the thread and coupling (double) joint. It is sufficient to state that flush joint casing of equal strength to ordinary casing is available in most sizes and types so the question as to the best type is not overly important for most work.

### Larger Clearances

Flush joint casing allows larger clearances for any one casing pattern, and therefore allows the use of smaller surface casings to achieve a desired completion size. This is decidedly advantageous where several strings of casing are to be placed as a smaller hole can be started at the surface, the strings of casing to be handled will be lighter, and successively smaller holes will be drilled as each string of casing is set. Excavation can be reduced at least 25 per cent in most wells. There should be an appreciable saving involved in the reduction of excavation. We have been unable, however, to find this saving in an area where several 12½-inch and 9¾-inch holes were drilled by the same rigs. This, of course, refers to Gulf Coast fish tail digging as the cost of drilling in rock bit country would undoubtedly reflect the increased costs in cones alone.

Savings in excavation do mean real savings in the amount of mud laden fluid required for circulation, thus saving weighting material and chemicals used for treatment. Smaller amounts of mud fluid are required to obtain the same fluid velocities so a saving in mud pump power is readily realizable. The amount of power required to rotate the bit is small as compared with overall rig requirements so, unless advantage was taken of the smaller hole to use smaller drill pipe, very little power would be saved in the handling of the drill pipe and bit.

Flush joint casing of certain types can be lessened in cost by the use of Range 3

## Officers of the Petroleum Industry Electrical Association

Newly elected officers of the Petroleum Industry Electrical Association. Standing, left to right: J. W. Flint, Empire Pipe Line Co., Bartlesville, vice president; P. F. Davis, Texas Pipe Line Co. of Oklahoma, Tulsa, director; F. S. Leonard, Shell Pipe Line Co., St. Louis, director. Bottom row, left to right: A. J. Balcom, Magnolia Pipe Line Co., Dallas, director; C. O. Shirley, Phillips Pipe Line Co., Bartlesville, past president, director; H. E. Browne, Sinclair Prairie Pipe Line Co., Independence, Kans., secretary-treasurer; Morris Chambers, Standard Pipe Line Co. of Louisiana, president.

(40-foot lengths) plain end pipe. This, however, requires special orders to the mills, which, of course, is also true for Range 2 (30-foot lengths) plain end, as it is rarely stocked. Flush joint pipe will usually cost more than the collared pipe, but in as much as smaller casing sizes can be used to achieve the same completion size, casing programs can be designed at the same cost, or at some savings in cost. The latter is particularly true as the number of strings of casing are increased.

Flush joint liners have admitted advantages over collared liners as they may be of larger diameters and still have the same clearance. A flush liner will also follow in a tight hole which would freeze collared pipe. Flush joint casing is also of considerable value when junk has been sidetracked in the hole. The flush pipe will slide past the junk while the collars would tend to hang up on the junk and pull it back into the hole thus freezing the pipe. Once the flush has started past the junk it is almost certain that the pipe will continue to run. Flush pipe is also easier to pull and this may prove of considerable value in certain areas.

Flush joint casing is of special value in high pressure areas with particular reference to those areas where surface sands have been charged with high pressures caused by blowouts or improper completion of other wells. Flush joint can be run without incident against pressure through a stuffing box and cemented in place. This can also be accomplished by the use of two stuffing boxes so as to pass collars on collared casing. The former requires less time, is less cumbersome, requires less expensive equipment, and will cost much less. Flush joint casing equipped with square threads can be run much more quickly than "V" thread pipe saving time and rushing critical casing jobs.

### Heaving Shale

Flush joint casing has been proposed as a possible means to combat heaving shale. The procedure outlined is to carry flush joint casing through a surface stuffing box while drilling, underream the hole, and run additional casing as new hole is made. Heaving shale may be caused by internal stresses in the shale which are relieved by expansion into the freshly drilled hole; by the presence of high pressure gas in the sand laminations or cleavage planes in the shale, which gas immediately blows shale into the hole when the drill pipe is spudded or withdrawn rapidly so as to cause low bottom hole mud pressures; or by the presence of bentonitic shales or shale partings which take up water from the mud. All three factors undoubtedly contribute to heaving shale, with the latter two being the most important as it is doubtful if the first type of heaving shale can ever be drilled if the section is appreciably thick.

Carrying casing will undoubtedly help to eliminate much of the swabbing action caused by drill pipe as it will be much easier to obtain co-operation on the part of the driller in pulling up one or two stands of pipe very slowly; and, the amount of shale exposed to the swabbing action is reduced materially. The amount of mud in contact with the heaving shale is materially reduced and this will reduce the rate of hydration of the bentonitic material.

Casing carried in this manner will freeze but it is proposed that the casing be kept moving up and down through the stuffing box and kept rotating by means of a hydraulic table. Circulation can be broken occasionally by opening a valve below the stuffing box thus keeping the mud back of the casing in good shape. The casing is carried until frozen and drilling is then resumed with a smaller size of casing. This method has not been tried in the Gulf Coast but may have advantages as holes are frequently lost just as a productive sand capable of charging the mud column with gas and oil are reached. This lends additional credence to the theory that high pressure gas and oil sands may be responsible for heaving shales.

## Durable Goods Committee Discusses Re-employment

The durable goods industries committee has addressed a letter to code authorities, code committees and all employes in the durable goods industries, setting forth its position.

"Re-employment," the committee says, "is being blocked by the presence of laws which choke the flow of money and credit and by proposed bills that go even further in that direction. Re-employment must be found largely where unemployment now exists, in the production of durable goods which are paid for to a considerable extent by the proceeds of the sale of new securities. Re-employment in these industries is dependent upon a revival of the flow of savings of the people and of available credit into the securities of private business for the purpose of financing the purchase of durable goods. This flow of savings and credit has been blocked by the restrictive provisions of the Securities Act of 1933, and will be further blocked if the proposed Securities Exchange bills, S. 2693, H. R. 8720, known as the Fletcher-Rayburn bills, are enacted into law in their present form.

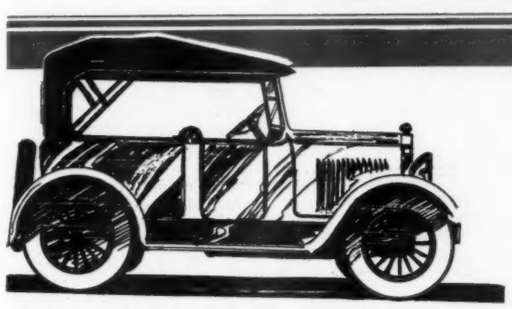
"The Fletcher-Rayburn bills as now worded contain provisions which would seriously interfere with the operation of private business and would place it under far reaching regulation by the commission charged with the regulation of the securities exchanges. These bills would further impose such regulations upon every small enterprise throughout the country, which might wish to have its securities traded in through a dealer, to any extent, in any community, no matter how small or how far removed from the great speculative centers. In addition these bills would require the periodical reporting of the amount of stock held by each stockholder owning more than 5 to 10 per cent of such stock in any such company. This would discourage men from making large investments in or retaining their present large holdings in such industrial securities."

### PANHANDLE QUARTERLY REPORT

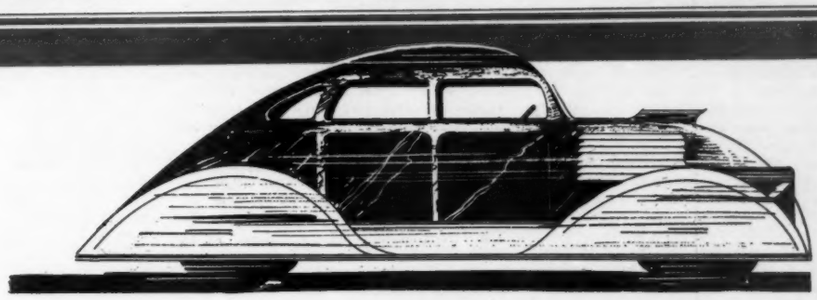
Panhandle Producing & Refining Co. and subsidiaries report for quarter ended March 31, 1934, net loss of $47,013 after taxes, depreciation, depletion, amortization, intangible development costs, interest, etc., comparing with net loss of $118,443 in first quarter of 1933.

## Those in Attendance at Southwestern Gas Measurement Short Course at Norman, Oklahoma

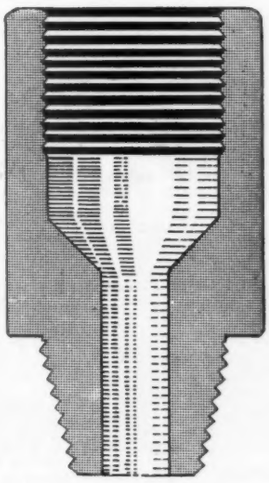
# STREAM LINED FOR NEW CONDITIONS



A standard in motor cars for 24 years . . . Offered great air resistance, but it didn't matter when travel was slow.



STREAM LINE of new models minimizes resistance . . . NECESSARY FOR MODERN CAR EFFICIENCY AND SPEED.



Likewise, the old fashioned tool joint, a standard for years, offered great resistance to mud stream but this handicap was not so noticeable in the days before deep drilling.

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## REED FULL HOLE TOOL JOINTS

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# Three Important Tests in Bee County Attracting Attention of Southwest Texas Operators

SAN ANTONIO, Tex., May 12.—Much interest in the Southwest Texas area during the past week was shifted to Bee County as the result of three important tests now at the critical stage along with the announcement of several important tests to be drilled within the near future.

Caesar Oil Co.'s No. 1 Pullin, about 6 miles northwest of Pettus and in the F. Lewis Survey, topped the Pettus sand at 3,007 feet and had sand from 3,007-32 feet and shale and sand from 3,032-34 feet and operators set casing without making a drill stem test. It is believed the test will make a producer from the sand. It is reported the well was drilled on the wrong tract through error and late in the week was shut down for orders. Surface elevation is 431 feet. It is located 150 feet from the NW line and 150 feet from the SW line of the 35-acre tract.

Phillips Pet. Co.'s No. 1 Morgan, on a block of 13,930 acres in the Eyles Survey, was circulating at 6,090 feet in a cavey hole. The well is said to have a high gas pressure and it was necessary to mix several hundred sacks of Baroid with the mud to prevent a blowout. Late in the week it was preparing to run a Slumberger survey before running 7-inch casing. It is reported the well may be carried to the Cockfield. It topped the Vicksburg at 4,299 feet and had top of the Jackson at 4,449 feet actual or 4,285 feet subsea.

### Several New Locations

Heep Oil Co.'s No. 1 J. C. Wood, about 5 miles southeast of Beeville and in the F. Crane Survey, was drilling sand at 4,213 feet and had a big volume of gas and an odor of oil. Operators had mixed 500 sacks of Baroid with the mud to prevent a blowout.

In the vicinity of the Caesar Oil Co.'s No. 1 Pullin a number of new locations have been started within the past week. The Caesar company has spudded and set surface casing at 60 feet on No. 1 R. E. Miller and has made location for No. 1 W. E. Buckman, both of which are in the Franklin Miller Survey. The Houston Oil Co. has also completed derrick for No. 1 R. E. Miller in the Franklin Miller Survey.

Dirks Brothers were moving in material for No. 1 Skinner and Harris 160 feet from the north line and 990 feet from the west line of the NW of Section 10, Jose Maria Uranga Survey.

About 4½ miles northwest of Mineral and in the George Brown Survey, Ed Folvey and others have abandoned No. 1 J. B. Borroum with total depth of 3,705 feet. It topped the Jackson at 2,080 feet actual or 1,680 feet subsea.

In southern Karnes County, Magnolia Petroleum Co.'s No. 2 Guy Porter, 300 feet north of its No. 1 Scarborough, has been completed for 152 bbls. in 12 hours through 31/64-inch choke with a pressure of 100 pounds on tubing and 320 pounds on casing. It had the Pettus sand from 3,638-48 feet which is the total depth. George Ray's No. 1 Radford about 4 miles northeast of the North Pettus Field was drilling ahead below 3,762 feet. It had a show of gas from 3,507-10 feet.

### Discovery Makes 165 Bbls.

Atkins & O'Neil and Continental Oil Co.'s No. 1 J. F. Welder, about 5 miles southwest of Odem and in the Trans-Salt Dome region of Southwest Texas, has been completed for 165 bbls. daily flowing through ¼-inch choke. Tubing pressure was 650 pounds and casing pressure 970 pounds. This new sand discovery proved the existence of a producing area three weeks ago when it came in flowing at the rate of 7½ bbls. of 33.9 gravity oil per hour through ¼-inch choke. It had sand showing oil from 5,374-75 feet, cap 5,375-76 feet, and the main pay sand from 5,376-82 feet. It topped the Discorbis at 4,066 feet and encountered top of the Heterostegina at 4,221 feet actual or 4,161 feet subsea.

About 3 miles north of Sinton and 7 miles northeast of the new discovery, Plymouth Oil Co.'s No. 1 Welder had cored from 5,415-34 feet and is reported the last foot showed oil. Late in the week it had set screen and was preparing to bring in. Most of the week was spent in trying to hold the well in control, as it was showing such a high gas pressure.

Continental Oil Co.'s No. 1 R. Driscoll Estate, new deep sand discovery in the old Driscoll Pool in Duval County, which has been attracting considerable interest during the past few weeks, has been completed for 12 bbls. per hour through ½-inch choke, with 30 per cent water. Tubing pressure was 650 pounds and pressure on casing 800 pounds. The well first came in flowing about 1½ bbls. per hour of 33 gravity oil from a total depth of 3,448 feet after plugging back from 3,461 feet. Jones & Carragy's No. 1 J. W. Kidd in Survey No. 56 has been abandoned as dry with total depth of 2,222 feet.

In the Eagle Hill Pool of Duval County the Eagle Hill Oil Co.'s No. 2 Foster in Survey No. 206 has been abandoned as dry with a total depth of 2,180 feet. It tested gas with 300 pounds rock pressure. The Kohler Field marked up two gassers during the past week. Chiquita Oil Co.'s No. 1 Richardson in Section 5, was completed for 8,000,000 feet of dry gas daily at 1,735 feet. It had a rock pressure of 225 pounds. Windsor Oil Co.'s No. 1 B. Peters in Survey No. 34 was completed for 30,000 feet of gas with total depth of 2,630 feet. Rock pressure was 900 pounds.

### Government Wells Field

The Government Wells Field marked up 8 completions during the past week, six of which were producers and one dry hole. Magnolia Petroleum Co.'s No. 25 Duval County Ranch bottomed hole at 2,320 feet and was completed for 75 bbls. oil and 75 bbls. of salt water daily. Magnolia's No. 3 Paul Riley was completed for 5 bbls. per hour at 2,242 feet. Reynosa Oil Co.'s No. 8-B Duval Ranch bottomed hole at 2,265 feet and made 10 bbls. per hour through 9/16-inch choke. Russ and others' No. 6-A Hahl was completed for 140 bbls. daily at 2,328 feet. Sun Oil Co.'s No. 54 Weiderkehr bottomed hole at 2,271 feet and made 2 bbls. per hour. No. 55 Weiderkehr drilled to a total depth of 2,303 feet and made 48 bbls. per hour through ⅜-inch choke. No. 58 Weiderkehr was completed for 26 bbls. per hour through ⅜-inch choke at 2,284 feet. Magnolia Petroleum Co.'s No. 8-A C. W. Hahl, 660 feet north of No. 6-A in Section 45, was abandoned as dry with a total depth of 2,306 feet.

North of Agua Dulce in Nueces County, Camp and others' No. 2 King, which has been attracting considerable interest during the past two weeks, was shut down for repairs at 5,539 feet. During the early part of the week four attempts were made to get a drill stem test on the well and all failed. It topped sand at 5,531 feet and it is the opinion the possibilities for production are favorable. Diadem Oil Co.'s No. 1 J. C. Mayo, near Robstown, was drilling at 4,200 feet in shale.

About 12 miles north and 3 miles east of Roma in Starr County, Great Plains Oil Co.'s No. 1 Sanchez was drilling at 3,815 feet. McDonald & Campbell's No. 1 C. C. Bowman, about 8 miles north of the Jeffries Lambeth area, was shut down at 2,150 feet. William F. McGinley's No. 1 Starr County Cattle Co., about 2,000 feet northwest of Jeffries Lambeth's No. 1 Gasser, was drilling 2,415 feet.

### Hidalgo County

In Hidalgo County, the Union Sulphur Co.'s No. 1 American Rio Grande Land & Irrigation Co., about 7½ miles north of Mercedes, was coring hard sandy shale at 4,721 feet. It is reported that every foot in the well is being cored. Otto Woods' No. 1 John Lawrence in Porcion 39 of the Ancient Jurisdiction of Reynosa, had set surface casing. Davis & Harrison's No. 1 Lula George in Porcion 41, had also set surface casing.

Near the North Pettus Field and in northern Goliad County, H. H. Weinert's No. 1 Grady Smith was drilling at 3,520 feet. In Calhoun County and about 9 miles southeast of Seadrift, Continental Oil Co. is moving in material for No. 1 American National Realty Co. Heep Oil Co.'s No. 1 Patricia Welder in the J. M. Rice Survey was coring at 5,565 feet. It topped the Discorbis 4,623 feet and had top of the Heterostegina at 4,911 feet.

About 3 miles northeast of Uvalde and in Uvalde County, Humble Oil & Refining Co. had moved in spudder and was drilling below 175 feet on No. 1 R. L. Anderson. The well was started with rotary but lost returns at less than 100 feet.

Caldwell County marked up two abandonments during the past week. Hinton & Dodson's No. 1 Carrie Lipscomb on the north end of the old Luling Field in the Guadalupe College Survey, was abandoned with total depth of 2,707 feet in chalk. Top of the chalk was encountered at 2,532 feet. H. J. Porter's No. 1 A. Carter, northeast of Lytton Springs and in the G. Pace Survey, was abandoned as dry with total depth of 1,833 feet. It topped chalk at 1,780 feet and on a 10-minute drill stem test from 1,820-33 feet showed two joints of mud.

### Aransas County

In Arkansas County and about 2 miles northwest of Rockport, American Liberty Oil Co.'s No. 1 Dietzel was shut down for orders at 6,056 feet.

About 4 miles southeast of Alice and in the Pointevent Survey No. 205 of Jim Wells County, C. H. Robertson's No. 1 C. Mull has been abandoned as dry with total depth of 3,509 feet. Putnam & Bode's No. 1 McCarley, about three-quarters of a mile southwest of Sandia in the northern part of the county, had a show of gas at 2,806 feet and at last report was going ahead below 2,862 feet.

Bastrop County marked up three completions during the past week, two dry holes and one producer in the Cedar Creek Pool. Ogden and Sun Oil Co.'s No. 1 J. W. Snowden in the Jasper Standifer Survey, was abandoned as dry with total depth of 1,770 feet in chalk. Ogden & Reed's No. 6 W. P. Talley in the Joshua Gray Survey bottomed hole at 2,401 feet and showed one thribble of mud and a show of gas before being abandoned as dry. It topped the chalk at 2,296 feet. In the Cedar Creek Pool, Marts & Bevens' No. 3 Orgain was completed for 250 bbls. daily on pump with total depth of 1,722 feet. It topped the Serpentine at 1,640 feet.

In McMullen County, Al Buchanan has spudded No. 1 Hagist. It is located 990 feet east of the west line and 330 feet north of the south line of the N half NE Section 18. Surface elevation is 417 feet. Cotulla's No. 1 Gordon in Section 127 was drilling at 2,155 feet. Henshaw Brothers' No. 1 Lachusa in Survey No. 478 was drilling at 2,263 feet. C. C. Schumway's No. 5 Shiner in Section 66 of the Schumway Subdivision of the Shiner Ranch, was drilling at 1,505 feet. Texio Oil Co.'s No. 1 Two Rivers Ranch Co., in Section 81, has been abandoned as dry with total depth of 1,558 feet.

## Wildcat Operations in Southwest Texas

**Week Ending May 12**

**ARANSAS COUNTY**

| Company, well, farm name, section and block— | Remarks |
|---|---|
| American Liberty Oil Co.'s No. 1 Dietzel, 1,650 ft. from N line and 6,300 ft. from E line of John Smith Sur. in Lot 32, Blk. 4 (2 mi. NW of Rockport) | S.D. for orders 6,056 ft. |

**ATASCOSA COUNTY**

| | |
|---|---|
| Texas Pet. Co.'s No. 2 Masterson, 290 ft. from E line and 280 ft. S of No. 1 (7½ mi. S of Sumerset), J. M. Mott Sur. No. 386, Subd. No. 3, B.&G.W. Carruthers estate | 10-in. csg. at 20 ft.; 900 ft.; no report. |

**BANDERA COUNTY**

| | |
|---|---|
| Parkford et al's No. 1 Mrs. R. L. Duke, G.H.&S.A. Sur., Sec. 7 | Material. |
| Peerless O. & G. Co.'s No. 1 Garrison Sur. No. 506, 1,500 ft. from N and 2,700 ft. from E lines of Sur. (8 mi. SW of Medina) | Location. |

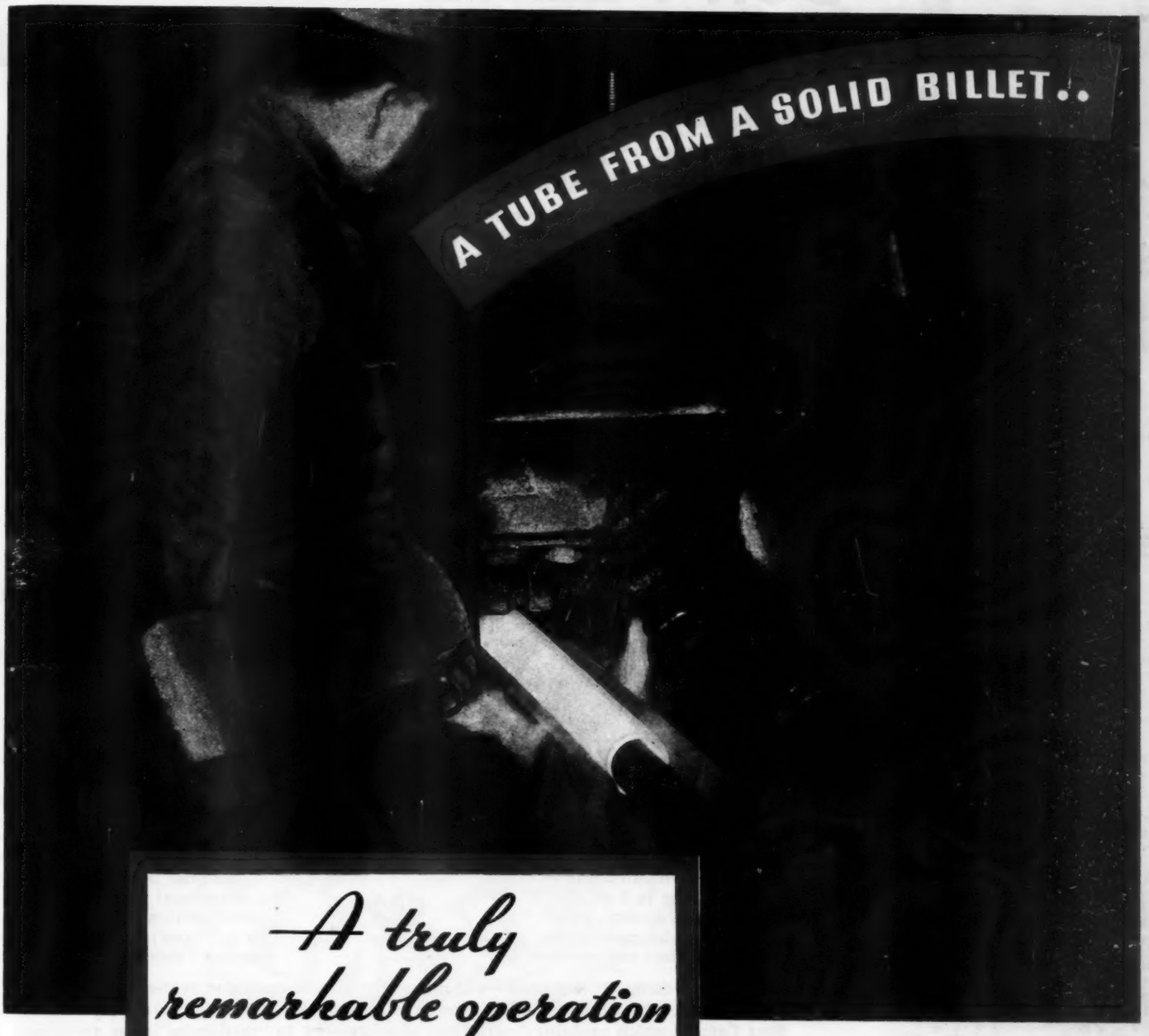
**BASTROP COUNTY**

| | |
|---|---|
| Chas. E. Anderson's (Ca-Tex O. & G. Dev. Co.) No. 1 Pendergrass, 1,343 ft. from NE line, 310 ft. from SE line of 130-ac. tract in Henry Warnell Sur. | S.D. 1,815 ft. |
| Hinton et al's No. 1 Glass, 2,000 ft. from NW and 1,300 ft. from SW lines of Ferguson estate 239-ac. tract in Henry Warnell Sur. | Top Edwards 1,907 ft.; T.D. 1,909 ft.; showing sulphur water. |
| Marts & Beavens' No. 1 King, 850 ft. from SW line of farm and survey and 1,000 ft. from NW line of 150-ac. King tract, in Enoch Harris Sur. (3 mi. E of Elgin) | Location. |
| Ogden and Sun Oil Co.'s No. 1 J. W. Snowden, 300 ft. from NE line and 355 ft. from SE line of 119-ac. tract in Jasper Standifer Sur. | T.D. 1,770 ft.; abd. |
| Three Oil Co.'s No. 1 M. Ingram, H. S. Morgan Sur. | T.D. 120 ft.; S.D. |

**BEE COUNTY**

| | |
|---|---|
| Caeser Oil Co.'s No. 1 Pulling, F. Lewis Sur., 150 ft. from NW line, 150 ft. from SW line of 35-ac. tract | T.D. 3,034 ft.; set csg. and W.O.C. |
| Dirk Bros.' No. 1 Skinner-Harrison, 160 ft. from N and 990 ft. from W line in NW Section 10 of Ragley Subd. of Chittim Ranch, 1½ mi. from Tuleta | Moving in rig. |
| Ed Folney et al's No. 1 J. B. Borroum, 330 ft. from E line and half way between N and S lines of 8-ac. tract in Geo. Brown Sur. (4½ mi. NW of Mineral) | T.D. 3,705 ft.; abd. |
| Heep Oil Co.'s No. 1 J. C. Wood, 466 ft. from N and E lines of F. Crane Sur. | T.D. 4,213 ft.; trying to prevent blowout. |

(Continued on Page 127)

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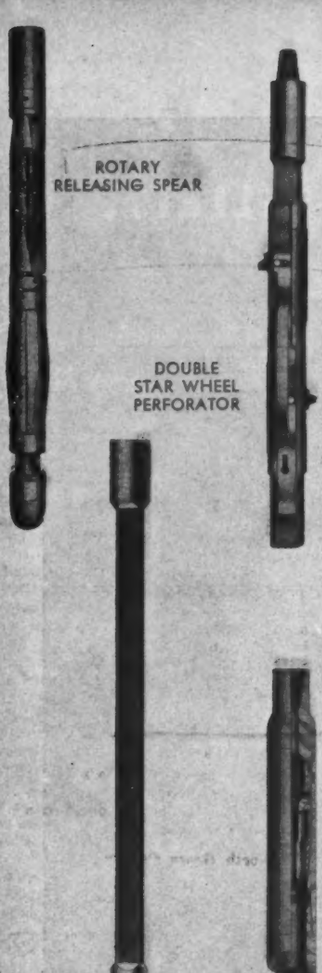


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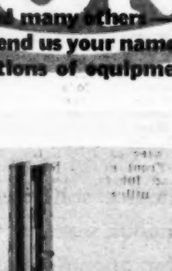

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# Fifth Producer Proves Best in the Cayuga Field; Large Increase in East Texas Field Locations

By L. E. BREDBERG

DALLAS, Tex., May 14.—Hill & Hill, Inc., of Fort Worth, and Turman Oil Co.'s No. 1 Tubbs is the fifth producer in the Cayuga Field of northwest Anderson County. It is over a mile northeast of the nearest producer, and outside of the original block proven by Tide Water Oil Co. and Texas Seaboard Oil Co. There are many small leases surrounding the Tubbs well and a drilling campaign is foreseen as soon as the Government's pool regulations are satisfied.

The well was completed for an initial production of 24 bbls. per hour, flowing through one-quarter inch tubing choke from Woodbine sand logged at 4,065-85 feet, where the hole is bottomed. It is considered the best well in the field. Barnsdall Oil Co. is drilling a north offset. Tide Water Oil Co. and Texas Seaboard Oil Co. hold offset acreage to the south. Several small tracts are around the Cayuga schoolhouse to the east, and it will be difficult to hold down drilling in the area immediately surrounding the new extension which shows the field to be nearly 2½ miles wide from northeast to the southwest.

J. R. Meeker of Fort Worth and associates have staked location about three-quarters of a mile northeast of the Tubbs producer. It is to be drilled 150 feet from the north and south lines and 419 feet from the west line of a 12.97-acre tract in the A. Enes Survey.

### Pool Extended

Tide Water Oil Co. and Texas Seaboard Oil Co.'s No. 1 Rampy, in the James Wilson Survey, nearly three-quarters of a mile southeast of the discovery, also extended the pool in that direction this week when a plugging back job proved successful in shutting off the water. The well flowed 190 bbls. in 12 hours through one-quarter inch choke on tubing with tubing pressure 400 pounds and casing pressure 725 pounds. Total depth is 4,114 feet, but it was plugged back to 4,065 feet. Five-inch casing was cemented at 4,060 feet. The gas-oil ratio is lower than in any of the the other four producers.

Same companies' No. 3 Wills, about half way between the joint owners' No. 1 Wills and the newly completed Tubbs producer, in the S. Edmondson Survey, is the next well due. It is now cleaning through one-quarter inch tubing choke. Casing was set at 4,062 feet. Oil-saturated sand was cored from 4,049-4,069 feet. Elevation is 318 feet. Casing was set low, as in other wells, to shut off part of the gas and cut down the gas-oil ratio. No. 2 Wills, northeast quarter of the S. Edmonson Survey, about three-quarters of a mile due north of their No. 1 Wills, the second well completed, cored sand from 4,050-72 feet, showing oil stains. It is now coring.

### Freestone County

Daniels Oil and Royalty Co. is to plug back No. 1 P. D. C. Ball in the Aguilera survey, Freestone County, and complete as a gasser. It cored salt water sand from 4,912-18 feet, and from 4,951-73 feet. Last week a test was made after 2-inch casing was swung 10 feet off bottom at 4,877 feet, but it showed only gas and salt water, the gas diminishing from around 5,000,000 to 4,000,000 feet over night. It is certain of making a good gas producer when the water is cemented off, opening the third gas producing area in one of the southern tier of counties of East Texas within seven and a half months. The other gas discoveries were in the Buffalo area of Leon County and the Long Lake area of southwest Anderson, about 15 miles southeast of the Ball gasser.

Byrd and Frost and others continue work on their test 3 miles northeast of Slocum in southern Anderson County. A Schlumberger test is now being made. Location is on the Scott farm in the Joseph Crawford survey.

John Black and Darby Petroleum Co.'s No. 1 C. B. Meredith, in the W. Ray survey, southwest Henderson County, northeast of Cayuga Pool, logged top of the broken Pecan Gap chalk at 2,320 feet and the hard chalk at 2,340 feet. It is shut down at 2,360 feet for repairs. Surface elevation is 373 feet.

### Wildcats Staked

There were 3 wildcats staked in East Texas during the week. W. H. Oberthier and others made location on the East Texas Ore Co.'s lands in the W. H. Gilberth survey, 18 miles northwest of Jefferson. Livingston Oil Co. made location on the C. B. Watkins farm in the H. Z. Bailey survey, 3 miles south of Caro in Nacogdoches County. McCullough and others staked location one mile west of Dawson on the C. Berry farm in the William Moss survey, in Navarro County.

Shell Petroleum Corp. and others have plugged back No. 1 Lee in the William Cooper survey, Leon County, and will complete as a gasser. It was drilled to 6,040 feet, passing up several good gas strata in an effort to pick up oil saturated sand. At 5,482 feet 9⅝-inch casing was cemented after plugging back to 5,660 feet. It is over 4 miles northeast of the nearest gasser which is on a separate structure.

Rector and Webb's No. 1 Riddlesberger, in the W. F. Mitcham survey, about 6 miles northeast of Cuyaga Pool, but in southwest Henderson County, was abandoned at a total depth of 4,506 feet. Sand was topped at 4,210 feet.

### EAST TEXAS FIELD

There were 104 locations staked in East Texas this week, caused by the Railroad Commission's interpretation of the new spacing law granting equidistant offset permits which is causing a flood of applications for permits to drill, even on exceptionally small tracts. If permits continue to be granted as during the last few weeks there is no estimate possible as to the number of wells that will be completed before drilling ceases. Operators who are considering selling their properties to larger units are taking advantage of the commission's interpretation and are moving in on as many locations as possible. Major companies have been purchasing properties on the per well basis up to the present time, but with conditions becoming out of line are ceasing to purchase. Independents have taken advantage of the good prices paid for leases on the per well basis and of the ease with which they can obtain drilling permits, and major operators realize that by purchasing smaller properties they have only led to many more wells being drilled.

"Hot oil" production has not "cooled" perceptibly and there is little change in the overproduction situation.

There are 25 refineries shut down in the field but 49 others are handling over 55,200 bbls. per day. There were 451,995 bbls. per day transported by major trunk lines during the week, but no shipments were made by tank cars. Daily average deliveries ran 36,885 bbls. above reported production. Independent refiners continue building more plants.

The Texas Petroleum Council and East Texas Chamber of Commerce went on record as favoring Federal control. Many operators and companies joined in approval. There were 75 wells completed this week.

The oil committee of the East Texas Chamber of Commerce has called another meeting in the courthouse at Henderson at 10 a. m., on May 15, to develop sentiment for strict enforcement.

The West Texas Chamber of Commerce unanimously adopted a resolution favoring Federal control.

## East Central Texas Wildcats

**Week Ending May 14**

**ANDERSON COUNTY**

| Company, well, farm name, section and block— | Remarks |
|---|---|
| Harry Buss et al's No. 1 J. A. Campbell, 467 ft. from N and W lines of 151.30-ac. tract, James Wilson Sur. | Location. |
| Barnsdall Oil Co.'s No. 1 W. L. Tubbs, 467 ft. from W line and center of N and S lines of 40-ac. tract, Samuel Edmondson Sur. | Rig up. |
| Pete Burton et al's No. 1 Freeman Baptist Church, 105 ft. due W of NW cor. of W. Chancellor Sur. in center of a 2-ac. tract, W. T. Meredith Sur. | Location. |
| Byrd-Frost et al's No. 1 Alice Scott, 2,200 ft. from N and 700 ft. from E lines of Joseph Crawford Sur., 1¼ miles NW of Slocum | To plug back; T.D. 5,500 ft. |
| Byron and Jameson's No. 1 S. N. Price, 330 ft. from S and E lines of S. N. Price 60-ac. tract, Juan Y'Barbo Sur., 2 miles NE of Blackfoot | Set surface csg.; T.D. 327 ft. |
| Texas Seaboard Oil Co. and Tide Water Oil Co.'s No. 2 Edens, 1,400 ft. from E line and 2,333 ft. N of S line of Samuel Snider Sur. | Rig up. |
| Texas Seaboard Oil Co. and Tide Water Oil Co.'s No. 2 Nannie Wills, 1,400 ft. E of W line and 467 ft. S of N line of Wills tract, Samuel Edmondson Sur. | Drlg. 3,700 ft.; top Austin 3,167 ft.; base 3,595 ft. |
| Texas Seaboard Oil Co. and Tide Water Oil Co.'s No. 3 Wills, 1,201 ft. from W line and 1,481 ft. from S line of Tract No. 2, Samuel Edmondson Sur. | Waiting on cmt. to set; T.D. 4,067½ ft. |
| Tide Water Oil Co. and Texas Seaboard Oil Co.'s No. 1 L. A. Rampy, 467 ft. from S and W lines of Rampy 103.38-ac. tract, James Wilson Sur. | Waiting on cmt. to set; T.D. 4,060 ft. |
| Barnsdall Oil Co.'s No. 1 Loper, 467 ft. from N and W lines of 40-ac. tract, 1 mile SW of Cayuga, James Wilson Sur. | Location. |
| J. R. Meeker's No. 1 H. H. Duncan, 150 ft. from N and S lines and 419 ft. from W line of 12.97-ac. tract, one-quarter mile NE of Cayuga, A. Enes Sur. | Location. |

**CHEROKEE COUNTY**

| | |
|---|---|
| A. R. Lewis et al's No. 1 J. Bradford, 1,600 ft. from W line and 300 ft. from N line of 80-ac. tract, J. Laprella Sur. | Drlg. 2,300 ft. |
| A. F. Richardson's No. 1 P. Wood, 660 ft. from N line, 3,300 ft. from E line of 498-ac. tract, 14 miles E of Jacksonville, on Cherokee-Rusk County line, Ignacio Sanches Sur. | Derrick. |
| T. J. Wood et al's No. 1 New Birmingham, 660 ft. from S and E lines of 1,128-ac. tract, 7 miles SW of Rusk, Levi Jordan Sur. | Drlg. 4,012 ft. |

(Continued on Page 124)

### COMPLETIONS IN EAST TEXAS

**Cherokee County**

Mid-Kansas Oil and Gas Co.'s No. 8 Kelley, top sand 3,680 feet, initial production 54 bbls. per hour through open tubing, total depth 3,681 feet.

**North Gregg County**

Amerada Petroleum Corp.'s No. 3 S. G. Smith, top sand 3,531 feet, initial production 32 bbls. per hour through open tubing, total depth 3,541 feet. Arkansas Fuel Oil Co.'s No. 1-B Castleberry, top sand 3,373 feet, initial production 16½ bbls. in ¼ hour through open tubing, total depth 3,589 feet; No. 5 Annie Lee, top sand 3,614 feet, initial production 34 bbls. in ½ hour through open tubing, total depth 3,628 feet. Bond and Dillard's No. 6 Della Meyers, top sand 3,512 feet, initial production 110 bbls. per hour through open tubing, total depth 3,576 feet. Bond and Johnson's No. 5 Fenton, top sand 3,575 feet, initial production 75 bbls. per hour through open tubing, total depth 3,591 feet. Esleep Oil Co.'s No. 1 Mattox, top sand 3,618 feet, initial production 20 bbls. in 3 hours pumping, total depth 3,686 feet. Empire Gas and Fuel Oil Co.'s No. 11 J. C. Bumpass, top sand 3,511 feet, initial production 100 bbls. per hour through open tubing, total depth 3,543 feet; No. 7 A. Green, top sand 3,596 feet, initial production 29 bbls. in ½ hour through open tubing; total depth 3,666 feet; No. 10 J. T. Jeter, top sand 3,578 feet, initial production 24 bbls. in ¼ hour through open tubing, total depth 3,610 feet.

F. H. E. Oil Co.'s No. 5 M. Christian, top sand 3,643 feet, initial production 40 bbls. in 25 minutes through open tubing, total depth 3,680 feet. Fleming and Kimble's No. 8 J. Burns, top sand 3,654 feet, initial production 40 bbls. in ½ hour through open tubing, total depth 3,694 feet. General Crude Oil Co.'s No. 7 R. C. Barnswell, top sand 3,471 feet, initial production 21 bbls. in ¼ hour, through open tubing, total depth 3,505 feet. Humble Oil and Refining Co.'s No. 10 W. C. Mackey, top sand 3,568 feet, initial production 43 bbls. per hour through ¾-inch tubing choke, total depth 3,593 feet. Magnolia Petroleum Co.'s No. 6 R. L. Saulters, top sand 3,614 feet, initial production 100 bbls. per hour through open tubing, total depth 3,658 feet.

Reserve Development Co.'s No. 3 Tuttle, top sand 3,498 feet, initial production 60 bbls. per hour through open tubing, total depth 3,533 feet. Reynolds and Kimberlin's No. 3 Perry, top sand 3,587 feet, initial production 80 bbls. per hour through open tubing, total depth 3,617 feet. Rowan and Nichols' No. 5-A Todd.

(Continued on Page 122)

# Hopes of New Area in Ector County Diminished; Honolulu Test Encountering Sulphur Water

By L. E. BREDBERG
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., May 14.—Hopes of opening another producing area in Ector County or extending the producing area 3 miles southwest of Broderick & Calvert's No. 1 E. F. Cowden, a lone producer in Section 25, Block 44, Township 2s, T.&P. Survey, were diminished during the week, when Honolulu Oil Co.'s wildcat, No. 1 Kloh, encountered sulphur water from 4,255-60 feet and is now being plugged and abandoned. The test which is in Section 33, Block 44, Township 2s, T.&P. Survey, has been watched with much interest as it had been checking higher on every marker than Broderick & Calvert's No. 1 E. F. Cowden, but getting poor porosity in the lime section, it offered little chance of making a producer. Small shows of oil and gas were encountered at 4,040, 4,060 and 4,078-98 feet.

In the northwestern part of the county, C. J. Davidson's No. 1 Cummins, another wildcat, in Section 10, Block 45, Township 1n, T.&P. Survey, is reported to be running high based on top of the Grey lime which was topped at 3 825 feet, and is drilling below 3,945 feet. It has had several showings of gas, the largest at 2,740 feet. It is expected the production possibilities will be known during the week if drilling is not delayed.

### Addis Area

In the Addis area, Ector County, Landreth Production Co.'s No. 1-C Addis was completed during the week for a 96-bbl. well flowing. It topped the pay at 3,902 feet and was shot with 25 quarts from 3,923-65 feet and with 125 quarts from 3,900-60 feet. It is bottomed at 4,000 feet and is in Section 35, Block 43, Township 1n, T.&P. Survey. In the Holt area, northern part of the county, Landreth Production Co. and the Llano Oil Co.'s No. 3 Holt was shot with 280 quarts from 4,144 to 4,273 feet and swabbed 50 bbls. in 15 hours; before being shot it swabbed only 10 bbls. in 24 hours. It is in Section 20, Block A, P. S.L. Survey.

### Penn Pool

In the Penn Pool, south central part of the county, the first well to be completed for several months is nearing completion. Humble Oil & Refining Co.'s No. 2 Jones in Section 6, Block 44, Township 3s, T.&P. Survey, is flowing at the rate of 200 bbls. daily by heads from a total depth of 3,630 feet. This completion will extend the pool a short distance northwest and calls for immediate drilling of several offsets, now under way.

### Andrews County

A decrease in gas from 10,800,000 feet to 8,000,000 feet in Humble Oil & Refining Co.'s No. 1 Means in Andrews County, has been registered and the operators are now mudding off the gas, and it will be deepened from 2,957 feet at which the largest volume of gas was struck, blowing the tools up the hole. It is in Section 2, Block A-35, P.S.L. Survey. Its favorable appearance has caused quite an active lease campaign throughout the surrounding counties. In the southern part of the county, Fuhrman Petroleum Co.'s No. 1-B Bonner in Section 25, Block A-43, P.S.L. Survey, is nearing completion. It encountered its first gas showing at 4,065 feet, estimated to be 1,500,000 feet, and is drilling below 4,080 feet. Humble Oil & Refining Co.'s No. 1 Kuykendall, west of the Deep Rock Pool in the same county and in Section 24, Block A-46, P.S.L. Survey, is expected to resume drilling this week. It is bottomed at 4,174 feet.

### Ordovician Tests

The Ordovician wildcat of Humble Oil & Refining Co., No. 1 White & Baker in Pecos County, is reported to have topped the Ellenburger lime slightly below 9,385 feet. Reaching the Ellenburger lime makes this test the second test in the Permian Basin outside the Big Lake Pool to reach the Ordovician, the first being drilled in Crockett County by Stanolind Oil & Gas Co. on the J. S. Todd ranch. It is drilling below 9,477 feet and no shows of oil or gas have been reported. Using 9,385 feet as top of the Ordovician it is checking much lower than the producers in the Big Lake Pool and the Stanolind-Todd test. It is located 9 miles west of the Yates Pool, in Section 44, Block Z., T.C. Ry. Survey. Gulf Production Co.'s No. 103 McElroy, another wildcat Ordovician test, in Upton County, had drilled below 10,183 feet with the top of the Ordovician still unreported. This is the deepest test ever drilled in Texas.

### Church-Fields Proration

Weekly Oil Corp. of Fort Worth has filed suit in Travis County District Court attacking the Railroad Commission's order fixing the allowable for the Church & Fields Pool in Crane County. It is contended that the allowables for adjacent fields, particularly the Gulf-McElroy Field, are much higher than the Church & Fields wells, and claims that these fields are one common pool. Hearing has been set for May 28. This is the first suit against the Railroad Commission involving proraton orders in this dstrict.

### Pecos Wildcat

In Pecos County, Tex-Mex Petroleum Co. has made location for a wildcat test in Section 59, Block 8, H.&G.N. Survey. Actual drilling will be started during the week. It is to be drilled with cable tools to 2,500 feet.

### Crockett County

Joseph A. Tweedy, receiver for the Apollo Oil Co., formed by the late George Henshaw and Carl Cromwell, sold the 32½-acre producing lease in the Powell Pool, Crockett County, to A. R. Eppenauer of San Angelo. Four wells on the property are producing 60 bbls. of oil daily, and are located in Block 2-B, Survey No. 2 in the northwest part of the field.

### Ward County

In the Hutchins-O'Brien area, Ward County, Gulf Production Co.'s No. 27 Hutchins, Section 4, Block F, G.&M.M. B.&A. Survey, was completed at 2,761 feet, flowing 463 bbls. of oil in 24 hours.

### Winkler County.

Sid Richardson's No. 1-B Tidal-Scarborough in the northern part of Winkler County was completed for a 183-bbl. well accompanied with 3,000,000 feet of gas. It is bottomed at 3,027 feet and is in Section 4, Block 3-22, P.S.L. Survey.

### Yates Completion

Mid-Kansas Oil & Gas Co. is preparing to complete another large well in the Yates Pool, Pecos County. The company's No. 33-B Yates flowed nearly 4,445 bbls. of oil on an hour's proration test at 1,377 feet, the gauge being taken through four 4-inch and four 6-inch lines. Pressures in this field have always been phenomenal and the recently completed wells, the majority of which have been drilled by this company because of a campaign started some few months ago when a vacancy strip was awarded by court to an independent, who later sold his properties to the Mid-Kansas, show pressures to be holding about the same as when the first wells were drilled. This was one of the first fields in Texas to be placed under proration, the operating companies choosing to develop and produce their properties systematically to obtain the greatest ultimate recovery and with the lowest lifting costs possible, consequently no unnecessary wells have been drilled that were not forced by those who gained title to vacancy strips within the field.

## Wildcat Operations in West Texas

**Week Ending May 14**

| Company, well, farm name, section and block— | Remarks: |
|---|---|
| **ANDREWS COUNTY** | |
| Fuhrman Pet. Co.'s No. 1-B Bonner, 1,320 ft. from N line and 1,320 ft. from E line of Sec. 25, Blk. A-43, P.S.L. Sur. | Drlg. 4,051 ft. |
| Humble Oil & Ref. Co.'s No. 1 R. M. Means, 660 ft. from N and 660 ft. from E of Sec. 2, Blk. 2-35, P.S.L. Sur. | T.D. 2,957 ft.; to drill deeper. |
| Humble Oil & Ref. Co.'s No. 1 Kuykendall, 1,920 ft. from S and E lines of Sec. 24, Blk. A-46, P.S.L. Sur. | S.D. 4,174 ft. |
| Llano Oil Co.'s No. 1 J. E. Parker, 330 ft. from N line, 990 ft. from E line of Sec. 18, Blk. A-44, P.S.L. Sur. | Location. |
| **BORDEN COUNTY** | |
| Continental Oil Co.'s No. 1 Johnson, 660 ft. from S line and 660 ft. from E line of Sec. 34, Blk. 32, Twp. 4n, T.&P. Sur. | Moving in cable tools. |
| **BREWSTER COUNTY** | |
| Joiner-McIntyre's No. 1, 853 ft. from S. 2,390 ft. from E of Sec. 31, Blk. 352, W. M. Mitchell Sur. | S.D. 1,450 ft |
| **COKE COUNTY** | |
| Wm. Hooper's No. 1 Gaston, 240 ft. from S line and 654 ft. from W line of Joseph Sur. No. 11 | Drlg. 1,980 ft. |
| **CRANE COUNTY** | |
| Gulf Prod. Co.'s No. 1 Edwards, 330 ft. from S line and 330 ft. from E line of Sec. 21, Blk. B-18, Public School Land Sur. | Drlg. 4,935 ft. |
| Wahlenmaier Petroleum Corp.'s No. 1 W. P. Edwards, 330 ft. from N and 330 ft. from E of SW cor. of the NE of Sec. 12, Blk. B-23, P.S.L. Sur. | Drlg. 3,280 ft. |
| **CROCKETT COUNTY** | |
| J. D. Young's No. 1 Shannon, 330 ft. from W line, 330 ft. from N line of Sec. 35, Blk. 1, G.C.&S.F. Sur | S.D. 2,635 ft. |
| **CULBERSON COUNTY** | |
| Miller Bros.' No. 1 fee, 1,900 ft. from N and 660 ft. from E line of Sec. 21, Blk. 97, P.S.L. Sur. | S.D. 1,065 ft. |
| **DAWSON COUNTY** | |
| Ray Albaugh et al's No. 1 John Robinson, 1,320 ft. from N line, 1,320 ft. from W line of Sec. 46, Blk. M, E.L.&R.R. Sur. | S.D. 1,750 ft. |
| **ECTOR COUNTY** | |
| Atlantic Oil & Prod. Co.'s No. 2 Holt, 660 ft. from N line and 1,980 ft. from E line of Sec. 19, Blk. A, P.S.L. Sur. | Location. |
| C. J. Davidson et al's No. 1 Cole, 660 ft. from N line and 660 ft. from W line of Sec. 10, Blk. 45, Twp. 1n, T.&P. Sur. | Drlg. 3,880 ft. |
| Harrison et al's No. 2 Addis, 990 ft. from N line and 2,200 ft. from W line of Sec. 35, Blk. 43, Twp. 2s, T.&P. Sur. | S.D. 3,836 ft. |
| Harrison et al's No. 3 Addis, 1,650 ft. from N line and 2,200 ft. from W line of Sec. 35, Blk. 43, Twp. 2s, T.&P. Sur. | Location. |
| Humble Oil & Ref. Co.'s No. 1 Thomas J. Martin, 330 ft. from N and 440 ft. from E line of Sec. 38, Blk. 43, T.&P. Sur. | Cleaning out; T.D. 4,318 ft. |
| Humble Oil & Ref. Co.'s No. 2 E. J. Jones, 660 ft. from S line and 1,988 ft. from the W line of Sec. 6, Blk. 44, Twp. 3s, T.&P. Sur. | Prepare to acidize; 300 ft. of oil in hole; T.D. 3,630 ft. |
| Landreth Prod. Co.'s No. 1-B T. P. Land Trust, 2,200 ft from the S line and 440 ft. from the W line of Sec. 3, Blk. 43, Twp. 1s, T.&P. Sur. | Location. |

(Continued on Page 125)

### COMPLETIONS IN WEST TEXAS

### Ector County

Honolulu Oil Co.'s No. 1 Kloh and others, show of gas 3,935 feet, show of oil 4,045-60 feet, and 4,170 feet, dry and abandoned, total depth 4,259 feet. Fred Turner's No. 1-C Addis, top pay 3,902 feet, treated with acid, initial production 96 bbls. first 24 hours, total depth 4,000 feet.

### Howard County

Humble Oil and Refining Co.'s No. 2 W. R. Settles, top pay 2,370 feet, initial production 312 bbls. of oil and 208 bbls. of water, total depth 2,428 feet. Sinclair Prairie Oil Co.'s No. 10 G. M. Dodge, top pay 2,608 feet, initial production 50 bbls. per day pumping, total depth 2,808 feet.

### Jones County

C. C. Julian, Receiver's, No. 4 Swann, top lime 2,518 feet, initial production 80 bbls., total depth 2,545 feet, treated with acid. T. K. Simmons' No. 2 Ray Riddle, dry and abandoned, total depth 1,925 feet.

### Loving County

Sinclair Prairie Oil Co.'s No. 2 Bell, top pay 2,232-36 feet, initial production 180 bbls. swabbing and flowing, total depth 4,267 feet. Texas Pacific Coal and Oil Co.'s No. 1 Rex, dry and abandoned, total depth 4,572 feet. West Texas Petroleum Corp.'s No. 2 J. G. Allen, top pay 4,275 feet, shot with 213 quarts, 4,255-4,305 feet, initial production 162 bbls. flowing, total depth 4,310 feet.

### Runnels County

Lon Evans' No. 1 L. P. Woods (recompleted) dry and abandoned, total depth 2,210 feet. Jack Roberts' No. 1 J. L. King (recompleted) shot with 20 quarts, 3,475-3,499 feet, dry and abandoned, total depth 3,722 feet.

### Pecos County

Arthur Adams and others' No. 1 J. Masterson, top pay 1,175 feet, initial production 50 bbls. daily, total depth 1,426 feet. Cardinal Oil Co.'s No. 20 J. H. Tippett, top pay 608 feet, initial production 250 bbls. of oil and 70 bbls. of

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The designing, manufacturing, selling and actual using of equipment in the Oil Field—in Transporting or in Refining of petroleum products—calls for unquestionable responsibility all along the line.

As distributors of supplies to the Oil and Gas Industry we are conscious at all times of our responsibility to see that only dependable equipment is handled by our organization—hence the careful choosing of sources of supply.

In keeping with this policy we are pleased to announce the addition to our Roster of Responsible Manufacturers the name of

"RAYBESTOS"

After exhaustive tests of various brake linings used by the Industry, we finally selected Raybestos Woven Brake Lining, which is now available at our field stores.

The name "Raybestos" on Brake Lining is truly an Imprint of Quality.

# FRICK-REID

## SUPPLY CORPORATION

PITTSBURGH, PA. TULSA, OKLA.,
AND BRANCHES

water, total depth 610 feet. Mid-Kansas Oil and Gas Co.'s No. 33-B Yates, top pay 1,225 feet initial production 4,444 bbls. of oil per hour, total depth 1,417 feet.

**Ward County**

Atlantic Oil and Producing Co.'s No. 16 W. D. Johnson, top pay 2,361 feet, initial production 265 bbls. flowing through tubing, total depth 2,531 feet. Humble Oil and Refining Co.'s No. 2 Louis Richter and others', top pay 2,387 feet, initial production 27 bbls. of oil per day, total depth 2,550 feet.

**Winkler County**

Sid Richardson's No. 1 W. F. Scarborough, top pay 2,717 feet, initial production 183 bbls. flowing through casing, total depth 3,027 feet.

## COMPLETIONS IN RANGER

**Brown County**

W. Earl's No. 1 Byler, dry and abandoned, total depth 1,326 feet. H. P. Evans' No. 1 Low, dry and abandoned, total depth 752 feet. S. C. Herring's No. 1 Scott, dry and abandoned, total depth 1,900 feet. J. B. Coombs' No. 1 E. E. Knight, dry and abandoned, total depth 825 feet.

**Callahan County**

H. B. House and others' No. 6 E. L. Finley, gas sand 317-47 feet, initial production 3,000,000 feet of gas, total depth 347 feet. Henry Sample's No. 1 Slaughter, dry and abandoned, total depth 740 feet.

**Coleman County**

Hy Grade Oil & Gas Co.'s No. 1 J. C. Debrell, gas 2,616-55 feet, initial production 3 bbls., total depth 2,655 feet. I. A. Guffey and others' No. 2 B. B. Fowler, gas sand 239-40 feet, initial production 200,000 feet of gas, total depth 240 feet.

**Eastland County**

Arab Gasoline Co.'s No. 2 A. J. Bonds, gas pay 3,587-94 feet, initial production 387,000 feet of gas, total depth 3,594 feet.

**Palo Pinto County**

Lassiter and others' No. 1 T.&P.R.R. Co., temporarily abandoned, total depth 1,636 feet. Parker Co.'s No. 1 W. S. Scruggs, dry and abandoned, total depth 2,503 feet.

**Shackelford County**

J. P. Harris' No. 1 J. B. Matthews, show of oil 795-805 feet, initial production 35 bbls., total depth 805 feet. Miss L. D. Hill's No. 3 Hill, dry and abandoned, total depth 925 feet. Floyd Holder's No. 1 Green, dry and abandoned, total depth 1,022 feet. Knight and others' No. 5 Jeter, dry and abandoned, total depth 1,240 feet. Owens-Snebold Oil Corp.'s No. 1-A Reynolds, dry and abandoned, total depth 1,236 feet. Reynolds and Richardson's No. 12 J. B. Matthews, shot 40 quarts 980-90 feet, initial production 30 bbls., total depth 1,118 feet. Roeser and Pendleton's No. 11-201 Morris Buie, oil sand 1,600-11 feet, initial production 60 bbls., total depth 1,617½ feet. Veeley Osage Oil Co.'s No. 1-A Alexander, top lime 870 feet, initial production 10 bbls., total depth 884 feet, treated with acid.

**McCulloch County**

Reeves and Riley and others' No. 1 Fred Taylor, dry and abandoned, total depth 1,770 feet.

## COMPLETIONS IN PANHANDLE

**Childress County**

McClintock and others' No. 1 Moore, abandoned, total depth 1,010 feet.

**Gray County**

British American Oil Co.'s No. 5 Phillips, shot 400 quarts 3,242-92 feet, initial production 120 bbls., total depth 3,292 feet; No. 6 Phillips, shot 80 quarts 3,222-92 feet, initial production 135 bbls., total depth 3,292 feet. Dixon Creek Oil & Refining Co.'s No. 2 Jackson, shot 200 quarts 3,176-3,237 feet, initial production 197 bbls., total depth 3,242 feet. Empire Gas & Fuel Co.'s No. 2-S Archer, shot 480 quarts 3,160-3,208 feet, initial production 305 bbls., total depth 3,219 feet. Magnolia Petroleum Co.'s No. 1 Haggard, total depth 3,330 feet, plugged back to 3,305 feet, shot 200 quarts 3,266-3,305 feet, initial production 205 bbls. Stanolind Oil & Gas Co.'s No. 1 Worley-Reynolds (old well drilled deeper), old total depth 3,105 feet, new total depth 3,150 feet, initial production 19 bbls. Sun Oil Co.'s No. 3 Purviance (old well drilled deeper), old total depth 2,970 feet, new total depth 3,066 feet, initial production 44 bbls. Texas Co.'s No. 3 Bull (old well drilled deeper), old total depth 2,775 feet, new total depth 2,986 feet, initial production 20 bbls. Wilcox Oil & Gas Co.'s No. 25 Combs-Worley, pay 2,913-20 feet, initial production 1,240 bbls., total depth 2,937 feet.

**Hutchinson County**

Combination Oil & Gas Co.'s No. 1 Johnson (old well drilled deeper), old total depth 3,050 feet, new total depth 3,080 feet, initial production 805 bbls. Phillips Petroleum Co.'s No. 1 Johnson, pay 3,044-50 and 3,092-99 feet, initial production 385 bbls. on gas lift, total depth 3,099 feet; No. 1 Williams, gas 2,378-2,700 feet, initial production 24,000,000 feet of gas, total depth 2,702 feet. Sinclair Prairie Oil Co.'s No. 1-B Johnson (old well drilled deeper), old total depth 3,162 feet, new total depth 3,306 feet, initial production 10 bbls. of oil and 2½ bbls. of water.

**Moore County**

Shamrock Oil & Gas Co.'s No. 1 Rubert, total depth 3,610 feet, plugged back to 3,250 feet, initial production 28,000,000 feet of gas.

**Wheeler County**

Anderson and Kerr's No. 1 Evans, gas 2,220-2,600 feet, initial production 13,000,000 feet of gas, total depth 2,611 feet. Piney Oil & Gas Co.'s No. 1 Mankins, total depth 2,216 feet, plugged back to 2,212 feet, initial production 100 bbls.; No. 1 Williams, gas 1,973-2,052 feet, initial production 70,000,000 feet of gas.

## COMPLETIONS IN NORTH TEXAS

**Archer County**

W. B. Albright's No. 1 M. P. Anderson, dry and abandoned, total depth 965 feet. O. T. Anderson's No. 4 Justice, lime 1,083-95 feet, initial production 50 bbls. pumping, total depth 1,095 feet; No. 5 Justice, oil sand 857-77 feet, initial production 15 bbls. of oil and 5 bbls. of water, total depth 877 feet. Bonner Oil Co.'s No. 5-E Abercrombie, lime 1,131-45 feet, initial production 35 bbls., total depth 1,145 feet, treated with acid; No. 6-E Abercrombie, lime 1,128-37 feet, initial production 30 bbls., total depth 1,137 feet, treated with acid. Bridwell Oil Co. and Continental Oil Co.'s No. 11 Logan, abandoned location. L. T. Burns' No. 1 Ikard, dry and abandoned, total depth 1,124 feet. Burns and Long's No. 9-B Wilson, oil sand 1,447-60 feet, initial production 120 bbls., total depth 1,460 feet. R. W. Busby's No. 2 Anderson, abandoned location. Fain and McGaha's No. 6 Falls County School Lands, lime 1,107-19 feet, initial production 125 bbls., total depth 1,119 feet; No. 1 Young, dry and abandoned, total depth 1,510 feet. Fain and McGaha and others' No. 28 Logan, lime 1,136-50 feet, initial production 400 bbls., total depth 1,150 feet.

Olney F. Flynn's No. 1 O'Donohue, dry and abandoned, total depth 2,400 feet. H. G. Gay's No. 2 Parkey, dry and abandoned, total depth 1,743 feet. Golding and Cochran's No. 1 Anderson, lime 1,348-64 feet, initial production 25 bbls. per hour, total depth 1,364 feet, treated with acid. Gray Drilling Co.'s No. 6 Ferguson, oil sand 654-60 feet, initial production 50 bbls., total depth 660 feet. W. B. Hamilton's No. 10 Cartwright Production, lime 1,157-67 feet, initial production 142 bbls. in seven hours, total depth 1,167 feet; No. 16 Coffield, lime 1,167-74 feet, initial production 100 bbls., total depth 1,174 feet, treated with acid; No. 17 Coffield, lime 1,166-79 feet, initial production 80 bbls. swabbing in six hours, total depth 1,179 feet. Kelly and Everett's No. 1 Hull, dry and abandoned, total depth 1,320 feet.

C. B. Long's No. 11 Logan, lime 1,146-59 feet, initial production 20 bbls., total depth 1,159 feet, treated with acid. A. E. Lynch's No. 1 Andrews, oil sand 977-84 feet, initial production 41 bbls. first 18 hours, total depth 984 feet. J. H. Massie's No. 19 Nichols, oil sand 1,590-98 feet, initial production 60 bbls., total depth 1,598 feet. Massie and Featherstone's No. 1 Archer County, oil sand 962-64 feet, initial production 15 bbls., total depth 964 feet. George L. Pace's No. 5 Abercrombie, lime 1,135-47 feet, feet, initial production 32 bbls., total depth 1,147 feet, treated with acid; No. 9 Arnold, lime 1,260-74 feet, initial production 38 bbls., total depth 1,274 feet, treated with acid; No. 10 Arnold, lime 1,148-62 feet, initial production 62 bbls., total depth 1,162 feet, treated with acid; No. 11 Arnold, lime 1,244-61 feet, initial production 150 bbls., total depth 1,261 feet, treated with acid.

Panhandle Refining Co.'s No. 1 Anderson, lime 1,409-15 feet, initial production 32 bbls., total depth 1,415 feet, treated with acid; No. 2 Anderson, lime 1,278-1,315 feet, initial production 20 bbls. per hour pumping, total depth 1,315 feet; No. 1 Parkey, dry and abandoned, total depth 1,280 feet. Perkins and Cullum's No. 5-C Falls County School Land, lime 1,158-78 feet, initial production 100 bbls., total depth 1,178 feet; No. 6-C Falls County School Iand, lime 1,148-69 feet, initial production 175 bbls. in eight hours, total depth 1,169 feet, treated with acid; No. 7-A Falls County School Land, lime 1,078-87 feet, initial production 35 bbls. per hour, total depth 1,087 feet; No. 15 Falls-Titken, lime 1,090-1,105 feet, initial production 80 bbls., total depth 1,105 feet. S. B. Perskey's No. 1 Archer County, dry and abandoned, total depth 1,000 feet. Rathke Oil Co.'s No. 1 Logan, dry and abandoned, total depth 1,239 feet. Stuckey Oil & Gas Co.'s No. 3 Ward Brothers, lime 947-58 feet, initial production 100 bbls., total depth 958 feet, treated with acid. Texas Co.'s No. 4 Perkins, lime 1,383-93 feet, initial production 45 bbls., total depth 1,393 feet, treated with acid.

Underwood and Campbell's No. 5 Ward Brothers, lime 1,005-15 feet, initial production 75 bbls., total depth 1,015 feet, treated with acid. Whatley and Whatley's No. 3 Justice, lime 1,080-99 feet, initial production 40 bbls. per hour swabbing and flowing, total depth 1,099 feet. White and Duncan's No. 1 Archer County dry and abandoned, total depth 854 feet. D. L. Wolfe's No. 4 Andrews, dry and abandoned, total depth 900 feet.

**Clay County**

Bridwell Oil Co.'s No. 1 Stephenson, dry and abandoned, total depth 1,450 feet.

**Cooke County**

Runsell and Clopton's No. 1 Yosten, dry and abandoned, total depth 1,600 feet.

**Jack County**

Brazos River Gas Co.'s No. 1 Box, oil sand 2,861-90 feet, initial production 40 bbls., total depth 2,895 feet; No. 1 Simpson, gas sand 2,830-50 feet initial production 7,500,000 feet of gas, total depth 3,250 feet. H. Y. Oil Co.'s No. 1 Bloodworth, dry and abandoned, total depth 618 feet. Texas Plains Oil Co.'s No. 3 Terrell, dry and abandoned, total depth 704 feet.

**Montague County**

Bridwell Oil Co.'s No. 2 Begley, lime 1,158-62 feet, initial production 200 bbls., total depth 1,162 feet.

**Wichita County**

Clark and Dunaway's No. 9 W. T. Waggoner, dry and abandoned, total depth 1,060 feet. T. F. Hunter's No. 15 Waggoner Brothers, oil sand 1,875-77 feet, initial production 30 bbls., of oil, 25 per cent water, total depth 1,877 feet. J. H. Massie's No. 1 Roller, dry and abandoned, total depth 1,851 feet; No. 1 W. T. Waggoner, lime 1,795-1,804 feet, initial production 75 bbls. total depth 1,804 feet. Petroleum Producers Co.'s No. 33 Allen and Kemp, oil sand 1,475-99 feet, initial production 125 bbls. total depth 1,499 feet. Turman Oil Co.'s No. 24 Waggoner, oil sand 1,532-60 feet, initial production 31 bbls. in 21 hours, total depth 1,560 feet.

**Wilbarger County**

T. C. Anthony's No. 2 Waggoner, dry and abandoned, total depth 2,130 feet. Atlantic Oil Producing Co.'s No. 16 Lido-Waggoner, lime 2,705-16 feet, initial production 70 bbls. per hour, total depth 2,716 feet. W. T. Waggoner jr.'s No. 3 Waggoner, oil sand 1,883-90 feet, initial production 250 bbls., total depth 1,890 feet. Luther Webb's No. 6-E Waggoner, oil sand 1,859-80 feet, initial production 268 bbls., total depth 1,880 feet.

**Young County**

L. T. Burns' No. 1 Foehr, dry and abandoned, total depth 1,088 feet. Howitz and Oldham's No. 1 Oliver, dry and abandoned, total depth 600 feet. C. J. Kleiner's No. 14 Belknap Coal Co., oil sand 695-97 feet, initial production 8 bbls., total depth 697 feet; No. 15 Belknap Coal Co.'s oil sand 702-11 feet, initial production 9 bbls., total depth 711 feet. L. O. Major's No. 1 Casey, dry and abandoned, total depth 768 feet. Nash and Windfohr's No. 9 Graham-Vick, abandoned location. Pitzer and West's No. 1-C James, dry and abandoned, total depth 3,900 feet. E. H. Remington's No. 4 Rochell, dry and abandoned, total depth 461 feet. Sinclair Prairie Oil Co.'s No. 1 Stovall, dry and abandoned, total depth 2,635 feet. Stuckey and Riggs' No. 1 Hardy, dry and abandoned, total depth 687 feet. E. D. Willis' No. 1 Logan, lime 567-74 feet, initial production 40 bbls., total depth 574 feet. D. L. Wolfe's No. 1 Routon, dry and abandoned, total depth 704 feet.

## WICHITA FALLS AND RANGER

Five new pools or extensions were opened in the Wichita Falls district during the week and two were discovered in the Ranger district. Three were in Archer County, one each in Cooke, Young, Brown and Coleman Counties.

E. J. Ruewaldt of Gainesville has a discovery in the making in his No. 1 Andress and others, 5,570 feet south and 450 feet east of the most northerly northwest corner of the J. Clark Survey, Abstract 194, Cooke County. It had sand showing oil from 1,348-79 feet and saturated lime from 1,379-89 feet, bottom of the hole. It filled up 1,150 feet with 35 gravity oil in four hours and is estimated good for 40 bbls. per day. It is 1 mile east of production, 4 miles north of Muenster and 7 miles southeast of the Bulcher Pool and in the same pay.

O. T. Anderson's No. 5 Justice struck a shallow pay sand from 857-77 feet, opening a new pay in central Archer County. It came in good for only 15 bbls. per hour, but the shallow depth makes the production valuable. It is in the center of the south line of Lot 3, W. R. Patton Survey. It will result in drilling "twin" wells as other wells are producing from the lime and wells can be drilled close to tap both horizons.

A. E. Lynch's No. 1-A W. L. Andrews, southwest corner of Lot 20, G. G. Frarley Survey, Abstract 129, Archer County, logged saturated lime from 941-95 feet and oil sand from 979-84 feet, and was shut down at 985 feet to complete. It pumped 41 bbls. in 18 hours opening a three-quarters mile northwest extension or another pool. It is about 3 miles southeast of Anarene. The well would also have made a producer from the lime and when production plays out in the sand horizon it will undoubtedly be plugged back to produce from the saturated lime streak which will probably yield good production after treating.

Continental Oil Co.'s No. 1 J. M. Powell, 2,300 feet from the Hamilton Pool south of Archer City, proved another extension when it came in for an 8-bbl. per hour well after treating with 1,000 gallons with 95 bbls. oil load under 900 pounds pressure. Hard lime was logged from 1,161-63 feet and saturated

lime from 1,163-66 feet, acid making a good well out of the 3 feet of saturated horizon.

**South of Olney**

Tebay and Leberman's No. 1 W. C. Leberman, northeast corner of T.E.&L. Survey No. 154, 1 mile south of Olney, logged saturated lime at 970-82 feet and was shot with 10 quarts from 970-77 feet. It was estimated good for 25 bbls. natural and is to be placed on the pump. It will probably be acidized. This well is surrounded by dry holes at greater depths and opens another shallow lime area.

Texas Inland Oil Co.'s No. 1 J. E. Sellers, in the W. Delk Survey No. 241, Jones County, which logged sand from 1,745-52 feet and was completed at 1,752 feet flowing 37.5 gravity oil, was deepened to 1,754 feet and is estimated good for 125 bbls. per day. It is in the Condor-Sayles Pool south of Hawley and extends that pool approximately 9,000 feet. Elevation is 1,610 feet. A connection may be made by Humble Pipe Line Co.

Mack Anderson and others of Stamford have assembled a block of 2,000 acres centering in Section 56, Block 1, H.T.&B. Survey, Fisher County, for a 3,150-foot test to be started within 90 days. A dry hole previously drilled to 3,507 feet had a good showing of oil which leads to the belief that a commercial producer may be found if treated with acid.

Eppenauer Drilling Co.'s No. 1 L. L. Shields estate, southeast corner of Block 1, G.H.&H. Survey No. 3, logged the Fry sand at 1,872-76 feet and filled up 1,400 feet with oil in two hours, then making a head. It is 3 miles north and west of Santa Anna and approximately 1½ miles northwest of the Fry sand producers in the Brenecke Pool, opening another pool in Coleman County. It is on a 1,700-acre block assembled by E. C. Marrs of Fort Worth.

Petroleum Oil Interests' No. 1 R. A. Thompson, northwest corner of the Garcia Montez and Duran Survey No. 113, 7 miles north of Brownwood and 8 miles east of the Fry Pool extensions, logged oil sand at 1,327-29 feet and flowed 2 bbls. per hour making 1,500,000 feet of gas. It opens a new area for Brown County. The owners have a small refinery at Brownwood and a gathering system besides other producing leases.

**Locations and Completions**

There were 53 locations staked in the Wichita Falls district during the week, 39 in Archer County which also had 43 of the 92 completions.

Daily average pipe line runs from the Wichita Falls district were 60,460 bbls. There are 315 tests drilling or preparing to drill, mostly in Archer County.

**PANHANDLE DISTRICT**

Production in this district averaged 55,670 bbls., a decrease of 2,185 bbls. per day. The district was given an allowable increase by the Railroad Commission of 4,800 barrels, or 56,800 bbls.

There were 16 locations staked. Only two tests were completed, both in Hutchinson County.

Ortex Oil Co. is spudding an interesting test in Section 7, Block M-24, T. C. Survey, Hutchinson County, about 10 miles northwest of the Stekoll pool and around 6 miles northwest of Phillips Petroleum Co.'s producing properties southwest of Stinnett. The test should determine the extent of the dolomite trend northwest from the Badger Pool which has been fairly well defined south of the river and through the Stekoll properties.

Vulcan Petroleum Corp.'s No. 1 Kinard in Section 41, Block 25, H. & G. N. survey, eastern Gray County, added importance when it logged a deeper pay at 2,332 feet and was shut down at 2,337 feet flowing 93 barrels the first hour and settled to 63 barrels per hour. It was later deepened to 2,371 feet, picking up another increase at 2,370 feet reported good for 150 barrels per hour. Elevation is 2,542 feet.

Two and a half miles east of this well and in Wheeler County, Smith Bros.' No. 1 Harlan, northwest quarter of Section 49, Block 24, H. & G. N. survey, gauged 2,460 bbls. per day when tested at total depth of 2,471 feet. Granite wash pay formation was logged at 2,465 feet. It is about one mile from production. Both wells have created additional interest and several locations have been staked.

## Supplemental List of Exhibitors

(Continued from Page 101)

**AMPLEX MANUFACTURING CO.**
**Outside Space on Grounds**

**BAIRD MANUFACTURING CO.**
**Booth 7, Arcade**

The Baird Manufacturing Co., Tulsa, is exhibiting in Booth 7, Arcade, with L. D. Baird and F. G. Benedict in attendance.

The exhibit features balls and seats, wrist pins, crank reboring machine, safety wheel and wrist pin puller.

**DARLING VALVE & MANUFACTURING CO.**
**Booths 45-60, California Bldg.**

The Darling Valve & Manufacturing Co., Inc., Fort Walnut Street, Williamsport, Pa., is exhibiting in Booths 45 and 60 in the California Building, with M. L. Hough, H. B. Foster, J. S. Kiesel, Earl J. Connelly, F. Cavenagh and T. M. Jones in attendance.

The exhibit features Darling forged steel drilling gate valves, forged steel flow line gate valve, semisteel pipe line gate valves, semisteel pipe line check valves, all bronze valves, high pressure fire hydrant for refinery and industrial use and Darcova, Darval and Darflex valve cups.

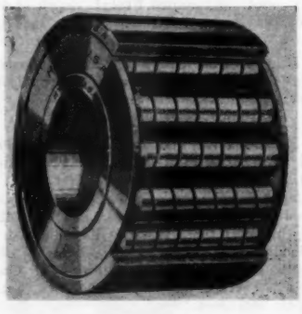
**HEMPHILL CO.**
**Booth 10, California Bldg.**

**HEWITT RUBBER CORP.**
**Booths 79-132, Texas Bldg.**

The Hewitt Rubber Corp., Buffalo, N. Y., is exhibiting in Booths 79 and 132 in the Texas Building, with F. E. Boyer and W. H. Botkin in attendance.

The exhibit features Monarch raw edge transmission belting; Monarch and Maltese cross superheat steam hose; tank truck hose; flue cleaning hose, Duroil oil suction and discharge hose and air hose; Maltese cross-fire hose; service station air hose and garden hose; Metric packings, stuffing box rings and crepe and smoked sheet rubber.

**HYATT ROLLER BEARING CO.**



**KELVINATOR CO.**
**Booths 12-13-14, California Bldg.**

The Kelvinator Co., Tulsa, is exhibiting in Booths 12, 13 and 14 in the California Building, with S. A. Altmont, Pat Hawkins, Charles Van Manns and Nick Carter in attendance.

The exhibit features a full line of Kelvinator water coolers and also Kelvinator oil burners.

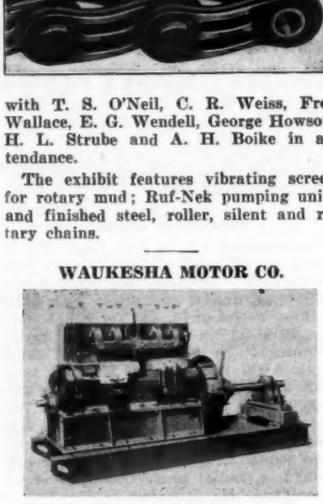
**LINK BELT CO.**
**Booth 63, Texas Bldg. Outside Space on Grounds**

The Link Belt Co., Indianapolis, Ind., is exhibiting in Booth 63 in the Texas Building and Outside Space on Grounds,

with T. S. O'Neil, C. R. Weiss, Fred Wallace, E. G. Wendell, George Howson, H. L. Strube and A. H. Boike in attendance.

The exhibit features vibrating screen for rotary mud; Ruf-Nek pumping units and finished steel, roller, silent and rotary chains.

**WAUKESHA MOTOR CO.**



**THE WM. POWELL CO.**
**Booths 45-58, Scientific and Technical Bldg.**

The Wm. Powell Co., Cincinnati, Ohio, is exhibiting in Booths 45 and 58, Scientific and Technical Building, with E. K. Pierce, James Coombe and William Heilig in attendance.

The exhibit features a special glove valve with an explosion proof electric motor valve operator or control equipment, designed for two of the largest refiners in the country for handling high pressure, high temperature media.

Valves with special seating materials for handling high sulphur crudes will also be displayed.

**WESTERN IRON & FOUNDRY CO.**
**Booth 28, Texas Bldg.**

The Western Iron & Foundry Co., Wichita, Kans., is exhibiting in Booth 28, Texas Building, with D. A. Swenson in attendance.

The exhibit features Ogden counterbalance, derricks, pulleys, rig irons, pumps, and refinery equipment; also swivel wrench and bubble caps.

## East Central Texas Fields

(Continued from Page 117)

top sand 3,545 feet, initial production 90 bbls. per hour through open tubing, total depth 3,590 feet. T. S. Schroeder's No. 6 Bumpass, top sand 3,525 feet, initial production 30 bbls. in 20 minutes through open tubing, total depth 3,592 feet. Selby Oil and Gas Co.'s No. 9-C Snavely Heirs, top sand 3,584 feet, initial production 21 bbls. in ½ hour through open tubing, total depth 3,587 feet. Simms and Stanolind Oil and Gas Co.'s No. 9 A. J. Tuttle, top sand 3,508 feet, initial production 50 bbls. in 25 minutes through open tubing, total depth 3,528 feet. Sinclair Prairie Oil Co.'s No. 14 Lawson, top sand 3,490 feet, initial production 31 bbls. in ¼ hour through open tubing, total depth 3,543 feet; No. 15 M. Lawson, top sand 3,504 feet, initial production 33 bbls. in ¼ hour through open tubing, total depth 3,550 feet.

Stanolind and Simms Oil Co.'s No. 10 Persons, top sand 3,490 feet, initial production 16 bbls. in ¼ hour through open tubing, total depth 3,550 feet. Sun Oil Co.'s No. 10 J. C. Gray, top sand 3,603 feet, initial production 20 bbls. in ½ hour through open tubing, total depth 3,639 feet; No. 9 E. C. Shoultz, top sand 3,629 feet, initial production 29 bbls. in ½ hour through open tubing, total depth 3,680 feet. J. O. Whittington's No. 7 J. M. Bumpass, top sand 3,541 feet, initial production 125 bbls. per hour through open tubing, total depth 3,580 feet. Yount Lee Oil Co.'s No. 3 Skipper and Garner, top sand 3,512 feet, initial production 59 bbls. per hour through 11/16-inch tubing choke, total depth 3,526 feet; No. 5-B M. Smith, top sand 3,504 feet, initial production 55 bbls. per hour through 11/16-inch tubing choke, total depth 3,524 feet.

**South Gregg County**

Arkansas Fuel Oil Co.'s No. 14 Hughey Ross, top sand 3,549 feet, initial production 50 bbls. per hour through open tubing, total depth 3,575 feet.

Gulf Production Co.'s No. 45 Hilburn, top sand 3,545 feet, initial production 40 bbls. in 40 minutes through open tubing, total depth 3,570 feet; No. 15 A. Muckelroy, top sand 3,600 feet, initial production 39 bbls. in 38 minutes through open tubing, total depth 3,610 feet; No. 12 R. H. Still, top sand 3,510 feet, initial production 30 bbls. per hour through open tubing, total depth 3,585 feet. Otto Massie's No. 2 Loughridge, top sand 3,727 feet, initial production 40 bbls. per hour through three-quarters inch tubing choke, total depth 3,729 feet. Shell Petroleum Corp.'s No. 4 H. T. Elder, top sand 3,519 feet, initial production 30 bbls. in one-half hour through open tubing, total depth 3,561 feet; No. 38 J. B. Watson, top sand 3,528 feet, initial production 10 bbls. in one-half hour through open tubing, total depth 3,589 feet. Tide Water Oil Co.'s No. 21 M. S. Barton, top sand 3,543 feet, initial production 10 bbls. in five minutes through open tubing, total depth 3,555 feet. Werby and McMinn's No. 3 J. S. King, top sand 3,575 feet, initial production 10 bbls. in six minutes through open tubing, total depth 3,590 feet.

**North Rusk County**

DeArman and McMillan's No. 6 Roberson, top sand 3,630 feet, initial production 25 bbls. per hour by heads, total depth 3,657 feet. Devonian Oil Co.'s No. 25 Motley, top sand 3,711 feet, initial production 37 bbls. in 20 minutes through open tubing, total depth 3,723 feet. Friedman Oil Corp.'s No. 3 Mayfield, Holland, top sand 3,676 feet, initial production 75 bbls. per hour through open tubing, total depth 3,676 feet. Gulf Production Co.'s No. 23-C C. E. Christian, top sand 3,669 feet, initial production 74 bbls. per hour through three-quarters inch tubing choke, total depth 3,683 feet; No. 11 R. M. Griffin, top sand 3,601 feet, initial production 75 bbls. per hour through open tubing, total depth 3,626 feet. Humble Oil & Refining Co.'s No. 20-B B. H. Sexton, top sand 3,643 feet, initial production 25 bbls. per hour through open tubing, total depth 3,756 feet. Sinclair Prairie Oil Co.'s No. 3-A Major Kennedy, top sand 3,658 feet, initial production 25 bbls. in two hours' swabbing, total depth 3,730 feet.

**South Rusk County**

Combined Oil Interest's No. 23 G. W. Eaton, top sand 3,731 feet, initial production 38 bbls. in one-quarter hour through open tubing, total depth 3,748 feet. Coombs and others' No. 7-B Cox, top sand 3,688 feet, initial production 50 bbls. per hour through open tubing, total depth 3,704 feet. Great Plains Oil & Gas Co.'s No. 4-B Samp Stone, top sand 3,655 feet, initial production 75 bbls. per hour through open tubing, total depth 3,670 feet. Gulf Production Co.'s No. 10 Grissom, top sand 3,704 feet, initial production 60 bbls. per hour through three-quarters inch tubing choke, total depth 3,715 feet. Haynes Drilling Co.'s No. 10 C. Lee, top sand 3,612 feet, initial production 31 bbls. in one-quarter hour through open tubing, total depth 3,644 feet. Humble Oil & Refining Co.'s No. 15 J. R. Box, top sand 3,732 feet, initial production 119 bbls. per hour through open tubing, total depth 3,770 feet; No. 42 Price, top sand 3,737 feet, initial production 117 bbls. per hour through open tubing, total depth 3,792 feet; No. 12-B White, top sand 3,650 feet, initial production 25 bbls. in 45 minutes through open tubing, total depth 3,718 feet.

Hunt Production Co.'s No. 13-D Brad-

ford, top sand 3,605 feet, initial production 20 bbls. per hour pumping, total depth 3,643 feet; No. 5-D Fair, top sand 3,617 feet, initial production 42 bbls. in one-quarter hour through open tubing, total depth 3,625 feet; No. 17-A H. C. Maxwell, top sand 3,760 feet, initial production 41 bbls. in one-quarter hour through open tubing, total depth 3,782 feet. McRoberts and others' No. 2 M. L. Thompson, top sand 3,713 feet, initial production 60 bbls. per hour through open tubing, total depth 3,738 feet. Mid-Kansas Oil & Gas Co.'s No. 6 C. O. Graham, top sand 3,661 feet, initial production 20 bbls. per hour swabbing, total depth 3,664 feet. Octo Oil Co.'s No. 3 W. H. Frederick, top sand 3,554 feet, initial production 30 bbls. per hour swabbing, total depth 3,670 feet. Oil Production, Inc.'s No. 3 L. P. Thrash, top sand 3,725 feet, initial production 75 bbls. per hour through open tubing, total depth 3,745 feet. Texas Co.'s No. 12 Wilson, top sand 3,640 feet, initial production 60 bbls. per hour through open tubing, total depth 3,664 feet. Uscan Oil Co.'s No. 2 Giles, top sand 3,680 feet, initial production 50 bbls. per hour through open tubing, total depth 3,770 feet.

**Smith County**

Magnolia Petroleum Co.'s No. 19 J. R. Wright, top sand 3,631 feet, initial production 23 bbls. in one-quarter hour through open tubing, total depth 3,637 feet. Sinclair Prairie Oil Co.'s No. 16 Wright, top sand 3,755 feet, initial production 35 bbls. in one-quarter hour through open tubing, total depth 3,758 feet. Sun Oil Co.'s No. 15 J. D. Henson, top sand 3,655 feet, initial production 40 bbls. per hour through open tubing, total depth 3,664 feet; No. 6-B H. A. Pace, top sand 3,705 feet, initial production 58 bbls. per hour through open tubing, total depth 3,709 feet.

**Upshur County**

Humble Oil & Refining Co.'s No. 19 W. W. Holland, top sand 3,570 feet, initial production 81 bbls. per hour through three-quarters inch tubing choke, total depth 3,612 feet. C. H. Lyons and others' No. 3 T. J. Dunbar, top sand 3,664 feet, initial production 60 bbls. per hour through open tubing, total depth 3,672 feet. C. H. Lyons' No. 2 E. L. Starr, dry and abandoned, total depth 3,688 feet (I. N. Stephens Survey). J. E. Mabee's No. 1 C. C. Landers, top sand 3,694 feet, initial production 20 bbls. in 10 minutes through open tubing, total depth 3,700 feet. Margay Oil Co.'s No. 8 Victory, top sand 3,674 feet, initial production 20 bbls. per hour through open tubing, total depth 3,695 feet. O. W. Production Co.'s No. 3 O. F. Smith, top sand 3,642 feet, initial production 60 bbls. per hour through open tubing, total depth 3,655 feet. Roberts and others' No. 5 A. Jenkins, top sand 3,630 feet, initial production 100 bbls. per hour through open tubing, total depth 3,657 feet. Sabinas Oil Corp.'s No. 10-C Collins, top sand 3,709 feet, initial production 87 bbls. in 59 minutes through open tubing, total depth 3,713 feet.

**WILDCAT COMPLETIONS**

**Anderson County (Cayuga Area)**

Hill and Hill's No. 1 W. L. Tubbs, top Pecan Gap 2,250 feet, top Austin chalk 3,330 feet, base 3,708 feet, top gas sand 3,883 feet, top oil sand 4,050 feet, initial production 24 bbls. through eleven-sixteenths inch tubing choke per hour, total depth 4,085 feet.

**Henderson County**

H. A. Baker and others' No. 2 Dupius, top Pecan Gap 1,734 feet, top Austin chalk 2,400 feet, base 2,645 feet, top Woodbine sand 3,094 feet, top sand 3,105 feet, dry and abandoned, total depth 3,557 feet (George Hancock Survey).

Rector and Webb and others' No. 1 C. A. Riddlesperger, top Pecan Gap 2,280 feet, base 2,489 feet, top Austin chalk 3,460 feet, base 3,825 feet, top sand 4,210 feet, dry and abandoned, total depth 4,506 feet (W. F. Mitcham Survey).

## Gallery of Petroleum to Preserve Pioneer Scenes

(Continued from Page 25)

low: George Rattan, Edwin C. Bell (he published newspapers in several Pennsylvania oil towns a half century ago and tried valiantly to establish a museum of oil at the site of the Drake well), Roe Reisinger, B. F. McCracken, Lyman D. Rhodes, Samuel Fertig, Joshua McCracken, Samuel B. Smith (tooldresser on the Drake well and son of Uncle Billie Smith, who did the actual drilling), William Hoffman, Capt. William B. Hasson (there's a park named for him in Oil City, Pa.), and J. J. McClaren (oil writer and author of "Sketches in Oil," a standard work on the history of petroleum).

**Osage Sale Brought $4,559,100**

Scenes incident to the sales of Osage leases in Pawhuska, Okla., are preserved in several large photographs of the auction on July 14, 1921. The total amount realized at this sale was $4,559,100, of which 14 tracts in the Burbank Field brought $3,256,000. The pictures show the crowds pressing about the auctioneer. There is a picture too of J. George Wright, superintendent of the Indian Agency throughout the big sales of these leases.

Signing of the first lease taken in Okmulgee County (Creek Nation), Oklahoma, is shown in one picture. "Uncle Joe" Evans, president of the Devonian Oil Co., is sitting at a table with the lease before him. Beside him stand E. O. Filley, "Dry Hole" Wilson and W. E. Wood.

There is the first well drilled by the Amerada Petroleum Corp. in Osage County, Oklahoma, the No. 1, completed July 14, 1920. The first commercial well put down in the Osage Nation, completed in June, 1897, by the Indian Territory Illuminating Oil Co., is shown. H. V. Foster, president of the company, and several associates are looking it over.

Bradford, Pa., once the center of wild excitement, is shown as it looked in 1876, with its squat buildings sprawled along Tunungwant Creek, Cushing, Glen Pool, St. Louis, Garber, Seminole and other historic fields are represented, and there are views of the Phillips Petroleum Co.'s immense natural gasoline plants in the Burbank area.

The collection already contains hundreds of individual pictures of oil men. Here are just a few, quickly recognized in a hurried survey: John Markham, R. M. McFarlin, James A. Chapman, Horace Barnard, Eugene Lawson, E. W. Sinclair, Martin Moran, Dan Moran, Homer Lamb, Bill Hales, Al Derby, Phil Ball, Jim O'Neill, Jack Crosbie, Frank Breene, L. B. Jackson, W. G. Skelly, Henry McGraw, James McGraw, Clint Moore, Charles Page, Jesse Hill, Frank Kistler, Will Kistler, Frank Butram, F. B. Parriott, Harry Tyrrell, Bill Funk, Homer Wilcox, Charles Peters, John Larkin, Pat White, J. S. Cosden, T. N. Barnsdall, "Pop" Anderson, Jake Hamon, Wirt Franklin, Bob Garland, Fred Darby, H. H. Champlin, Dave Moffitt, Charles Uschel—

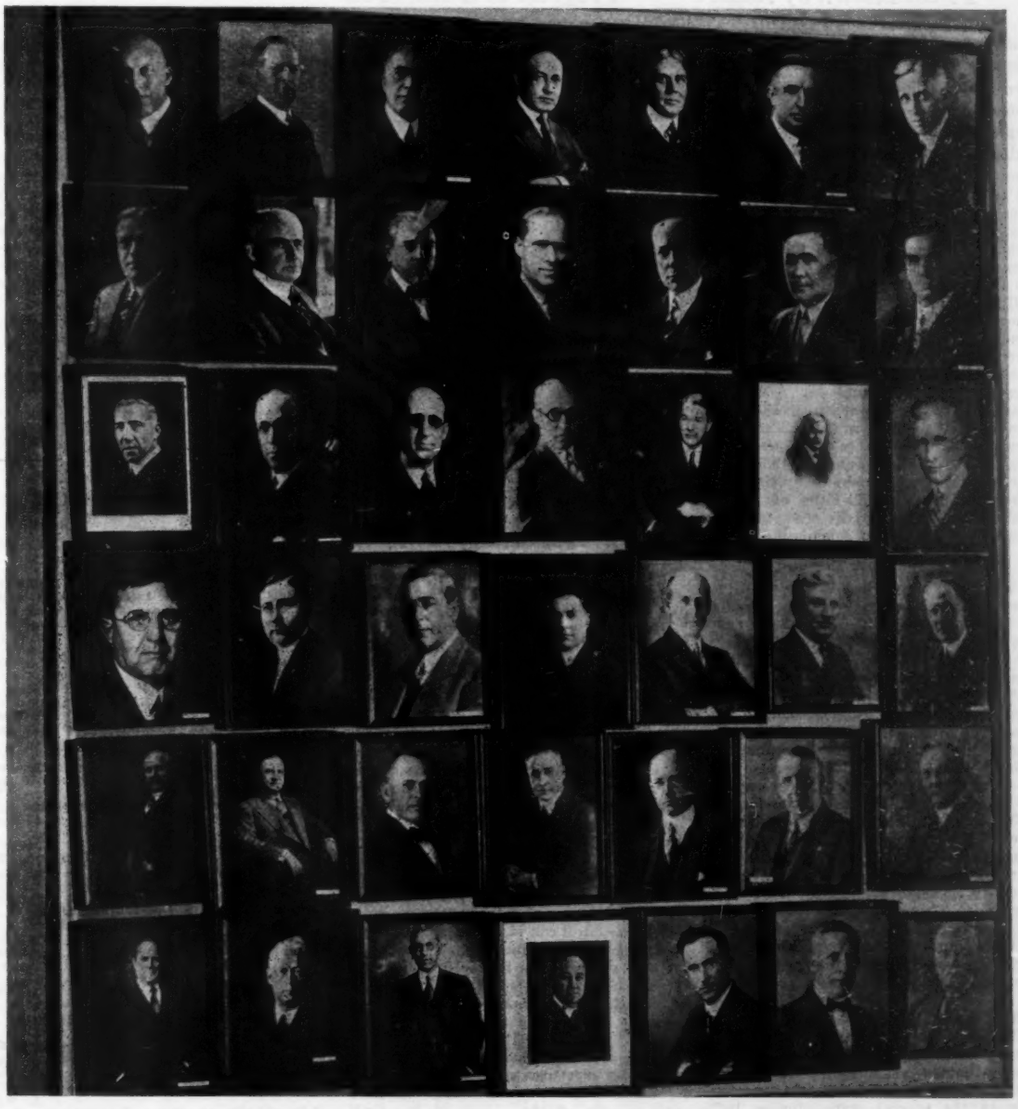
And all this is just a beginning.

## Eastern Market Shows Conditions Improving

(Continued from Page 39)

tributors and other jobbers who have low-priced material from refiners purchased under yearly contracts made last year which do not expire until June 1. These jobbers do not wish to store the oil for another season and are offering bargain material.

Kerosene and No. 1 furnace oil have been available over the past week as low as 5 cents per gallon in tank car lots and No. 2 oil, which is generally tight, has been sold at a low of 4¼ cents and



*First row: Herbert R. Straight, H. V. Foster, Glenn Braden, E. B. Reeser, Oscar R. Howard, Nelson K. Moody, Tom B. Slick. Second row: Charles Farren, J. Edgar Pew, R. C. Sharp, E. W. Sinclair, Charles J. Wrightsman, Walter R. Ramsey, S. G. Kennedy. Third row: Dale Shaffer, L. E. Phillips, Frank Phillips, Waite Phillips, E. W. Marland, Charles Page, Dana Kelsey. Fourth row: Burdette Blue, R. S. Litchfield, D. F. McMahon, John Gilliland, R. F. MacArthur, Tom Chestnut, J. Arthur Hull. Fifth row: John F. Overfield, E. O. Bartlett, T. K. Smith, T. J. Flannelly, James A. Veasey, J. H. Brennan, A. W. Leonard. Sixth row: J. Fletcher Farrell, H. M. Gilchrist, Frank Birmingham, Grant Stebbins, E. P. Harwell, R. M. Young, Capt. H. Y. Arnold*

XUM

No. 4 oil at 3¾ cents. Sellers are not willing to sign contracts for another year at these prices. It is predicted that the base tank car price on kerosene will be 5½ or 6 cents per gallon and No. 2 furnace oil will have a minimum price of 5 cents and No. 4, 4½ cents. The situation in regard to contracts continues very much muddled and this includes the bunker fuels, industrial fuels, UGI gas oils as well as furnace distillates and kerosene. As the situation now stands about the only type of contract that can be made is one in which the price to the buyer is based on the going market at the time of delivery. Many buyers in this territory insist on flat prices over the season or at least a top price. Some definite ruling from Washington in this matter would tend to stimulate trading.

### Export Gasoline

The export gasoline market continues inactive. The buying of the previous week, consisting of three cargoes, has not been followed with additional business. Quotations, which are nominal, range from 4¼ cents for U. S. Motor at Gulf to 4⅝ and 4¾ cents for 64-66, 375.

## No Gouging in Gasoline Prices Shown by Report

(Continued from Page 20)

tute has published the simple average monthly tank wagon and service station prices of all 50 cities from 1919 to 1933, inclusive, both excluding and including taxes representing the simple average retail service station price of regular gasoline for the whole United States. Included in the compilation were two cities in New York and one in each of the other states and the District of Columbia. A tabulation compiled from the Institute figures showing the service station prices on the first of each month from January, 1919, to February, 1934, inclusive, . . . shows the service station price both including and excluding taxes. The highest average service station price according to this compilation was 31.9 cents excluding taxes, or 32 cents per gallon, including taxes, on November 1, 1920. The lowest average price was 10.53 cents excluding taxes, or 15.68 cents per gallon including taxes on June 1, 1933. The service station prices shown by the Institute in each of the 50 cities on July 1, 1933, were substantially the same as those reported to the commission.

### Average Cost Declined

The figures compiled by the Institute show that the average cost of gasoline to the consumer declined from 24.77 cents per gallon on July 1, 1926, to 18.08 cents, or about 27 per cent, on July 1, 1933. During the same period state and Federal taxes on gasoline increased from 2.42 cents per gallon on July 1, 1926, to 5.67 cents per gallon on July 1, 1933. According to the American Petroleum Institute tabulation the July 1, 1933, average price to consumers increased to an average of 19.51 cents per gallon on January 1, 1934. Thus we find this low price season average 21 per cent below the high price season average of July 1, 1926. The January 1, 1934, average compared with the January 1, 1926, average of 21.31 cents per gallon shows a decline of less than 8½ per cent.

The commission has compiled a tabulation showing by states the net estimated increase in the annual cost of gasoline to the consumer based on a study of retail prices of regular grade gasoline in 272 cities over the seven months' period from July 1, 1933, to January 31, 1934. The estimated net increase during this period weighted by estimated consumption in the several states during 1933 was 1.04 cents per gallon amounting in the aggregate to approximately $160,550,000.

The total estimated consumption of all grades of gasoline during 1933 was 15,433,871,000 gallons. The average estimated increase in cost to consumer for all states from July 1, 1933, to January 31, 1934, was 1.04 cents per gallon aggregating approximately $160,550,000. This figure is purely theoretical. A definite figure could be arrived at only by artitrarily selecting two dates for comparison. The way prices have fluctuated in many markets during the last three months any other date than January 31 compared with July 1, 1933, would produce a different result.

### Gasoline Tax Factor in Consumer Price

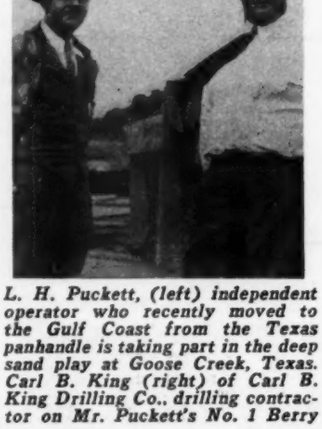
A study of the figures compiled by the American Petroleum Institute . . . shows that the average state and Federal tax per gallon on gasoline sold to the consuming public has increased from zero at the beginning of 1919 to 5.2 cents as of February 1, 1934.

Recent reports to the commission show that dealers are required to pay state tax on gasoline sold in every state in the Union in addition to the Federal tax of 1 cent per gallon. The Federal tax was 1½ cents per gallon from June 21 to December 31, 1933. The lowest state tax is 2 cents per gallon levied by Connecticut, District of Columbia, Missouri, and Rhode Island. The highest state tax is 7 cents per gallon effective in Florida and Tennessee.

## Drilling Play Is Now in Progress at Goose Creek

(Continued from Page 24)

encroach a long way into the field. Many of the wells, originally drilled on dry land, now are located well out into the water. This is attributed to the possibility that water perhaps has not displaced the large volume of oil which has been withdrawn from the sands, resulting in a packing and compressing of the sands.



*L. H. Puckett, (left) independent operator who recently moved to the Gulf Coast from the Texas panhandle is taking part in the deep sand play at Goose Creek, Texas. Carl B. King (right) of Carl B. King Drilling Co., drilling contractor on Mr. Puckett's No. 1 Berry*

### Difficult Drilling

Unusually difficult drilling conditions have been faced in the deep sand development. Much of the sand from 1,700 feet on down has become more or less crystallized making rather hard digging. Also, in the crystallization in some instances there have been left porous and sometimes cavity formations which result in the loss of returns. Occasionally the loss of returns is such that the drilling fluid pumped into a hole has come to the surface out in the bay perhaps several thousand feet way, At times, by pumping large volumes of mud, it is possible to wall up the porous sections to such an extent that drilling can be continued. At other times, additional corrective measures must be resorted to.

Goose Creek was discovered in 1906 and is one of the oldest of the Gulf Coast fields. Its presence was indicated by gas seepages and paraffin beds noticed as early as 1905. First production, which was in shallow sands around 1,600 feet and less, was of comparatively little significance or importance, and although drilling exploration kept up, it was not until 1916 that the first major production was found, this being in a sand lense around 2,030 feet. In the boom days which followed in the next couple of years, the field was produced widely and openly with a large withdrawal of oil resulting. Wells ranging from 10,000 to 30,000 bbls. were fairly frequent in various sands from 1,600 to 2,000 feet. In all the development, very little effort has been made until now to reach depths at which prolific production has been found in many of the other coastal fields.

## Gasoline Manufacturers Must Adjust Operations

(Continued from Page 22)

12-pound vapor pressure limits now recognized as safe maximums. He stated there could be further improvement made in car design especially among a remaining few which up to this time have not taken the problem seriously. Looking into the more distant future Doctor Bridgeman said it is not out of reason to expect a discarding of the present method of carburretion and to replace the system with an individual proportional injection nozzle on each cylinder in which case the vapor pressure of the fuel used could be raised several pounds with safety.

To gain some idea of what effect raising the vapor pressure of the average motor fuel would have upon the increase in the volume of motor fuel available, more particularly the volume of butane which could be added, Mr. Alden stated that 1 per cent butane added to a motor fuel raised the vapor pressure of the blend .8 pound as an average.

A. J. Kraemer of the Bureau of Mines added that the tests conducted on cars manufactured in 1933 gave disappointing results from a vapor locking standpoint and he also emphasized the need for more exacting design and a closer co-operation among natural gasoline manufacturers, refiners and car manufacturers.

Mr. Alden placed the blame for what might appear as a lack of co-operation thus far by stating that cars seem to be designed by salesmen and not by engineers. A. T. Sherer, of the Sinclair Oil & Gas Co., offered a bit of optimism for the future of the natural gasoline market also by stating that progress of a definite nature is taking place through the joint meetings of refining company representatives and natural gasoline manufacturers for the purpose of refiners finding means for absorbing what distress natural appears on the spot market and to discourage the sale of super stabilized natural through cut-rate stations.

### Labor Situation

Speaking on the subject of "Industrial Relations," H. W. Boggess of the Sinclair Prairie Oil Co. prompted the closest attention of those present. Reviewing the relationship that has existed between plant labor and oil company executives it was not difficult to trace the willingness of companies to share with labor the profits of good years and to explain how through failure of companies to realize adequate prices for its products over the past three years, that labor is more restless. Compared with other industries, the oil business has been relatively free of labor troubles and it has served as an example of a kind of labor-executive understanding that has worked to the advantage of both.

Dr. E. R. Lederer, allocator for District 4 and who has been closely identified with the application of the oil code with respect to labor and production control, offered a brief summary of the progress made in that work to date. He was more optimistic in stating what may be expected to be accomplished over the immediate future than what has been done in the past because refinery allocators have been vested with greater authority under the revised code. In order to offer a better understanding of the plans being made for the equitable allocation of motor fuel production among refiners, Doctor Lederer stated that refiners will receive their quotas by the sixteenth of the month for the following month and that for six days previous to the sixteenth, the district allocators will have an opportunity to make adjustments of the quotas given them by the Federal allocator.

### OPENS TULSA OFFICE

Marvin A. Smith, insulation division of Eagle-Picher Sales Co., has opened an office at 312 Thompson Building, Tulsa.

## East Central Texas Wildcats

(Continued from Page 117)

**FANNIN COUNTY**

L. Kean et al's No. 1 L. M. Boyd, 900 ft. from E line and 200 ft. from N line of survey, W. Hunt Sur. .... Drlg. 2,177 ft.

**FREESTONE COUNTY**

Clyde Creighton's No. 1 Holly Bros., 854 ft. from W and center N and S lines of lease, A.B.&M. Sur. ..... Junked; T.D. 5,180 ft.

Daniels Oil & Royalty Co.'s No. 1 F. D. C. Hall, 10,380 ft. from S line and 1,980 ft. from W line of survey, Jose Ignacio Auguilera Sur. ..... Coring; T.D. 4,885 ft.

Trinity Farm Co.'s No. 1 N. R. Stewart, 1,866 ft. SW from NE line and 933 ft. SE from NW line of 1,920-ac. tract, R. M. Williams Sur. ..... Location.

**GREGG COUNTY**

E. A. Lamb's No. 1 Clements, 500 ft. from W line and 1,880 ft. from N line of survey, G. A. Thomason Sur. ..... Derrick.

Sparkman and Reusch's No. 1 E. E. Stone, 1,000 ft. from E line and 330 ft. from N line of survey, M. Alexander Sur. ..... Derrick.

Webster Oil & Gas Co.'s No. 1 Register, 860 ft. from S line and 1,450 ft. from W line of survey, G. F. Penn Sur. ..... Waiting on cmt. to set; T.D. 3,400 ft.

**HENDERSON COUNTY**

Big Bad Wolf Oil Co.'s No. 1 McCreary, 1,800 ft. from W line and 330 ft. from S line of survey, 6 miles S of Malakoff, W. H. Irvin Sur. ..... Derrick.

Roy Black et al's No. 1 C. B. Meredith, 360 ft. from N and W lines of 64.5 ac. tract, 4 miles SE of Malakoff, Wiley Kay Sur. ..... Set surface csg.; T.D. 216 ft.

Campbell and Champlin's No. 1 R. S. Ansley, 108 varas S. 623 varas W. of NE cor. of lease, 6 miles SE of Buffalo, N. H. Thompson Sur. ..... Derrick.

**HUNT COUNTY**

H. C. Waggoner et al's No. 1 Love, 300 ft. from N line, 6,300 ft. from W line of 95-ac. tract, John Gillisky Sur. ..... Drlg. 2,932 ft.

**KAUFMAN COUNTY**

W. J. Lewis et al's No. 1 D. Clark, 430 ft. from S line and 600 ft. from E line of survey, 6½ miles NW of Elmo ..... Drlg. 400 ft.

**LAMAR COUNTY**

Cole et al's (formerly Optometrist Oil Club) No. 1 J. M. McFaddin, 450 ft. from S and W lines of E 25-ac. tract, 10 miles NW of Paris, Joseph Dick Sur. ..... S.D. 2,506 ft.

**LEON COUNTY**

Shell Petroleum Corp.'s No. 1 Lee, 1,500 ft. from NW and SW lines of farm and survey, William Cooper Sur. ..... S.D. 6,040 ft.

**MORRIS COUNTY**

Simpson et al's No. 1 Staggers, 800 ft. from S line of survey and 150 ft. from W line of lease, J. B. Nelson Survey ..... Drlg. 1,960 ft.

**LIMESTONE COUNTY**

**C. M. Joiner et al's No. 1 S. A. Knobb, 990 ft. from N line and 1,000 ft. from W line of survey, one-half mile N of Falls County line, Luke Moore Sur.** ..... Drlg. 3,700 ft.

**J. Rodgers et al's No. 1 Vol DeLone, 1,516 ft. from W line and 600 ft. from N line of W 100-ac. tract, Pedro Varela Sur.** ..... Shut down.

**NACOGDOCHES COUNTY**

Dick Schwab et al's No. 1 Z. Rambain, 990 ft. from N line and 330 ft. from W line of 97.5-ac. tract, J. Simpson Sur. ..... Drlg. 4,675 ft.

Livingston Oil Co.'s No. 1 C. B. Watkins, 150 ft. from N line and 330 ft. from NW lines of 160-ac. tract, 3 miles S of Caro, H. Y. Bailey Sur. ..... Derrick.

**NAVARRO COUNTY**

**W. J. Keeling et al's No. 1 J. F. Rushing, 764 ft. from N line and 150 ft. from W line of 184-ac. tract, 6 miles SW of Richardson, Henry Ford Sur.** ..... Derrick.

**J. B. Stoddard et al's No. 1 C. S. West estate, 1,000 ft. from W line and 650 ft. from N line of 642-ac. tract, Mathew Boren Sur., Abstract No. A-58** ..... Rigging up.

McCullough et al's No. 1 C. Berry, 330 ft. from SE cor. of 35-ac. tract, 1 mile W of Dawson, William Moss Sur. ..... Location.

**RAINES COUNTY**

**J. W. Hallsell et al's No. 1 P. F. Jones, 400 ft. out of SW cor. of 22-ac. tract, 2½ miles S of Alba, B.B. B.&C. Sur.** ..... Coring 1,634 ft.

**RUSK COUNTY**

Arnold and Shaw's No. 1 J. E. Arnold, 1,530 ft. from S line and 300 ft. from most southerly E line of survey, J. Crawford Sur. ..... Derrick.

George Hudson et al's No. 3 Jeff Phillips, 150 ft. from N line of survey and 700 ft. from W line of 100-ac. tract, 4 miles SE of Minden, N. Villaria Sur. .... Coring 2,970 ft.

**Johnson et al's No. 1 L.&G.N.R.R., 3,920 ft. from E line, 400 ft. from S line of survey, Wm. Kellen Sur.** .... Rig up.

**A. A. Oil Co.'s No. 1 Geo. Curbo, 1,900 ft. from S line, 330 ft. from E line of Wm. Christian Sur.** ..... Coring; T.D. 3,668 ft.

Octo Oil Co.'s No. 1 E. Tipps, 2,750 ft. from S line and 7,400 ft. from W line of Juan Ximines Sur. ..... Waiting on cmt. to set; T.D. 3,502 ft.

Reed et al's No. 1 S. Lacy, 1,610 ft. from S line and 1,000 ft. from E line of survey, R. B. Tutt Sur. .... Coring; T.D. 3,617 ft.

Sinclair Prairie Oil Co.'s No. 1 Kangerga Bros., 330 ft. from W and 300 ft. N of NW cor. of E. S. Van Sickel Sur. ..... Set surface csg.

**SMITH COUNTY**

Preston Rose et al's No. 1 Elisha Wiggins, 2,300 ft. from W line and 330 ft. from S line of 640-ac. tract, 2 miles SW of Winona, F. H. K. Day Sur., Abstract No. 285 ..... Derrick.

Texas Trading Co.'s No. 1 O. T. Ray, 330 ft. from S and W lines of E half of O. T. Ray 100-ac. tract, 10 miles SW of Tyler, M. T. Duncan Sur. ..... Drlg. 2,630 ft.

**UPSHUR COUNTY**

F. A. Fuller et al's No. 1 Penn, 330 ft. from N and E lines of Shell's 80-ac. Penn lease, James Scott Sur. ..... Drlg. 3,380 ft.

Virgil Hodges et al's No. 1 J. M. Floyd, 330 ft. from NE cor. of 126-ac. tract, 4 miles N of Gladewater, Railroad Sur. ..... Spudded and S.D.

Papadake et al's No. 1 L. L. Towery, 1,800 ft. N and 330 ft. E of SW cor. of survey, 5 miles N of Gladewater, W. L. Palmer Sur. ..... Derrick.

Randerson et al's No. 1 Nid Minor, 600 ft. from NW line and 1,800 ft. from NE line of tract, D. R. Cannon Sur. ..... Drlg. 2,800 ft.

**VAN ZANDT COUNTY**

Germany et al's No. 1 C. S. Coker, 150 ft. out of SW cor. of 55-ac. tract, William Daniel Sur. ..... Coring 1,200 ft.

**Gillum and Allen et al's No. 1 A. T. Bass, 150 ft. from W. line and 150 ft. from N line of 10-ac. tract, William Hart Sur.** ..... S.D. 4,236 ft.

**Griffith Bros.' No. 1 Bruce, 1,000 ft. from S line and 330 ft. from E line of 124-ac. tract, G. Martinez Sur.** ..... S.D. 1,562 ft.

Humble Oil & Refining Co.'s No. 3 S. R. Ray, 200 ft. N and 160 ft. W of SW cor. of Listenbee 30-ac. tract and on Ray 111.6-ac. tract, Nacogdoches County School Land Sur. ..... T.D. 1,257 ft.; showing oil.

Isaac et al's No. 1 C. F. Darrell, 330 ft. from S and W lines of 53-ac. tract, C. B. River Sur. ..... Derrick.

W. E. McKinney et al's No. 2 B. T. Davis, 285 ft. from N line and 235 ft. from W line of 13-ac. tract, J. Goodman Sur. ..... S.D. 1,166 ft.

Miller et al's No. 1 J. M. Palmer, 150 ft. from S and E lines of 69-ac. tract, Nacogdoches County School Land Sur. ..... Drlg. 74 ft

Peden and Olson's No. 3 W. Banson, 600 ft. S of No. 2 and 140 ft. from W line of tract, J. Goodman Sur. ..... Location.

**Pure Oil Co.'s No. 2 Ray, 250 ft. N of S line and 182 ft. W of E line of tract, Nacogdoches County School Land Sur., elev. 449.7 ft.** ..... S.D. 1,215 ft.

Pure Oil Co.'s No. 4 W. F. Swain, 660 ft. E of W line and 200 ft. N of S lines of 33.06-ac. tract, John Walling Sur. ..... Derrick.

Pure Oil Co.'s No. 5 O. L. and L. L. Swain, 208 ft. W of E line and 105 ft. N of S line of O. L. and L. L. Swain 48.2-ac. tract, John Walling Sur. ..... Set csg.

Pure Oil Co.'s No. 9 W. T. Jarman, 1,576 feet N of S line and 250 ft. E of W line of W. T. Jarman 132.8-ac. tract, Nacogdoches School Land Sur. .... Rig up.

Shell Petroleum Corp.'s No. 12 E. L. Fowler, 224 ft. N of S line and 179 ft. W of E line of 35.35-ac. tract, John Walling Sur. ..... Drlg. 2,300 ft.

Wheeler et al's No. 1 Cade, 180 ft. from S line and 150 ft. from E line of 20-ac. tract, Nacogdoches County School Land Sur. ..... Rig up.

J. D. Wrather et al's No. 1-A G. W. Carter, 1,000 ft. from S line and 250 ft. from W line of G. W. Certer 171-ac. tract, William Daniel Sur., 4 miles NE of Van ..... Drlg. 2,220 ft.

Peden and Olsen's No. 1 J. M. Palmer, 200 ft. from E and N lines of south 2 acres of 94-ac. tract, Nacogdoches County School Land Sur. ..... Location.

**WOOD COUNTY**

Cauble and Thompson's No. 1-A N. G. Bobbett, 900 ft. from S line and 330 ft. from W line of tract, 2½ miles NW of Mineola, Daniel Fuller Sur. ..... Coring 4,970 ft.

**McElreath and Suggett's No. 1 B. D. Holley, 466 ft. from S and W lines of Holly tract, 8 miles SW of Winnsboro, James M. Moore Sur.** ..... Rig up.

## Wildcat Operations in West Texas

(Continued from Page 118)

**Landreth Prod. Co.'s No. 2 O. B. Holt, 660 ft. from S and E lines of Sec. 15, Blk. 43, Twp. 1n, T.&P. Sur.** ..... Moving in material.

**Landreth Prod. Co. and Llano Oil Co.'s No. 2 O. B. Holt, 1,980 ft. from W and 1,980 ft. from N. Sec. 20, Blk. A, P.S.L. Sur.** ..... Treating with acid; T.D. 4,335 ft.

**Landreth-Llano Oil Co.'s No. 3 Holt, 660 ft. from N line and 660 ft. from W line of Sec. 20, Blk. A, P.S.L. Sur.** ..... Cleaning out after shot; T.D. 4,339 ft.

Landreth Prod. Co.'s No. 1 Clarence Scharbauer, 660 ft. from S and E lines of Sec. 20, Blk. 44, Twp. 1n., T.&P. Sur. ..... Drlg. water well.

Landreth Prod. Co.'s No. 1 O. B. Holt, 1,980 ft. from S line and 660 ft. from E line of Sec. 19, Blk. A, P.S.L. Sur. ..... Rig up.

Landreth Prod. Co.'s No. 1 T. P. Land Trust Co., 440 ft. from N line and 2,200 ft. from W line of Sec. 3, Blk. 43, Twp. 1s, T.&P. Sur. ..... Drlg. 3,475 ft.

**McCurdy et al's No. 1 Foster, 330 ft. from S line and 440 ft. from W line of Sec. 36, Blk. 43, Twp. 2s, T.&P. Sur.** ..... Drlg. 3,675 ft.

**Moran Drlg. Co.'s No. 1 Smith, 330 ft. from N line, 330 ft. from W line of Sec. 12, Blk. 43, Twp. 1s, T.&P. Sur.** ..... S.D. 4,425 ft.

Stanolind Oil & Gas Co.'s No. 6 J. M. Cowden, 660 ft. from N and 660 ft. W of the SE cor. of Sec. 27, Blk. 43, Twp. 1n, T.&P. Sur. ..... Location.

**Shell Pet. Corp.'s No. 2 Jones, 660 ft. from S line and 1,980 ft. from E line, Sec. 6, Blk. 44, Twp. 3s, T.&P. Sur.** ..... Drlg. 2,660 ft.

Skelly Oil Co.'s No. 1 Connell, 1,650 ft. from N line and 440 ft. from E line of Sec. 11, Blk. 16, P.S.L. Sur. ..... Rig up.

Stanolind O. & G. Co.'s No. 3 E. F. Cowden, 2,275½ ft. E and 330 ft. from S line, Sec. 24, Blk. 43, Twp. 2s, T.&P. Sur. ..... Drlg. 4,115 ft.; showing oil.

Stanolind Oil & Gas Co.'s No. 5 J. M. Cowden, 660 ft. from N and 1,980 ft. from E line of Sec. 34, Blk. 43, Twp. 1n, T.&P. Sur. ..... T.D. 4,440 ft.; plugged back to 4,392 ft.; will treat with acid.

Fred Turner's No. 2-A Addis, 2,310 ft. from N and 440 ft. from E of Sec. 35, Blk. 43, Twp. 2s, T.&P. Sur. .... Cellar.

**FISHER COUNTY**

E. T. Campbell et al's No. 1 W. R. Bishop, 570 ft. from S and 150 ft. from E of NW cor. of Sec. 18, Blk. 21, T.&P. Sur. ..... Moving in.

Condor Pet. Co.'s No. 1 Herring, 450 ft. from S and 330 ft. from W line of Sec. 192, Blk. 1, B.B.B.&C. Sur. ..... Drlg. 2,300 ft.

Condor Pet. Co.'s No. 2 Wilson, 640 ft. from N and 2,310 ft. from W line of Sec. 6, Blk. R. W. E. Richardson Sur. ..... Bldg. rig.

**Rosser & Pendleton's No. 2 Frank Steele, 1,470 ft. from S and 990 ft. from W line of Sec. 210, Blk. 1, B.B.B.&C. Sur.** ..... Swabbed 200 bbls. of oil and 200 bbls. of water; T.D. 3,196 ft.

**Sinclair Prairie Oil Co.'s No. 2 Frank Steele, 990 ft. from N and 330 ft. from E line of Sec. 72, Blk. 1, H.&T.C. Sur.** ..... Drlg. 2,882 ft.

**Southern's No. 1 King, 660 ft. from N and 330 ft. from W line of SW Sec. 193, B.B.B.&C. Sur.** ..... Drlg. 3,096 ft.

Stanolind Oil & Gas Co.'s No. 5 Steele, 1,170 ft. from S and 990 ft. from W line of Sec. 210, Blk. 1, B.B.B.&C. Sur. ..... Drlg. 2,060 ft.

**Texas Inland Oil & Gas Co.'s No. 1 First National Bank of Kamlin, 1,980 ft. from N and 990 ft. from W. Sec. 191, Blk. 1, B.B.B.&C. Sur.** ..... Pumping 12 bbls. of oil and 8 bbls. of S.W. per hour; T.D. 3,112 ft.

**Texas Co.'s No. 4 T. A. Jean, 920 ft. from N and E lines of Sec. 201, Blk. 1, B.B.B.&C. Sur.** ..... T.D. 3,114 ft.; will treat with acid.

Texas Co.'s No. 2-B Teagarden, 990 ft. from S and 330 ft. E of NW cor. of S half of Sec. 9, Blk. 8, W. E. Richardson Sur. ..... Slush pit.

Texas Co.'s No. 1 First National Bank of Rotan, 330 ft. N and E of the NW cor. of Sec. 210, B.B.B.&C. Sur. ..... Drlg. 300 ft.

**GLASSCOCK COUNTY**

Steve Currie et al's No. 1 Turner, 330 ft. from N line and 330 ft. from E line of Sec. 19, Blk. 33, Twp. 2s, T.&P. Sur. ..... S.D. 1,120 ft.

Steve Currie et al's No. 1 Underwood, 660 ft. from N line and 660 ft. from E line of Sec. 24, Blk. 3, Twp. 4s, T.&P. Sur. ..... Location.

Empire Gas & Fuel Co.'s No. 3 G. T. Hall, 330 ft. from the N line and 990 ft. from the W line of Sec. 21, Blk. 33, Twp. 2s, T.&P. Sur. ..... Spudding.

**John I. Moore et al's No. 1 J. S. McDowell, 1,980 ft. from N line and 660 ft. from E line of Sec. 22, Blk. 34, Twp. 2s, T.&P. Sur.** ..... Drlg. 1,976 ft.

Noble Drlg. Co.'s No. 1 Edwards, 2,310 ft. from W and 330 ft. from S of Sec. 17, Blk. 33, Twp. 2s, T.&P. Sur. ..... Pumped 44 bbls. in 24 hrs. after acid treating; T.D. 2,196 ft.

Noble Drlg. Co.'s No. 1 Lee, 330 ft. from N line and 2,310 ft. from E line of Sec. 20, Blk. 33, Twp. 2s, T.&P. Sur. ..... S.D. 2,080 ft.

Noble Drlg. Co.'s No. 2 W. P. Edwards, 330 ft. from the S line and 330 ft. from the W line of Sec. 17, Blk. 33, Twp. 2s, T.&P. Sur. ..... Location.

Simms Oil Co.'s No. 2 W. P. Edwards, 330 ft. from S and 990 ft. from E of Sec. 18, Blk. 33, Twp. 2s, T.&P. Sur. ..... Location.

Simms Oil Co.'s No. 1 W. P. Edwards, 330 ft. from S and E lines of Sec. 18, Blk. 33, Twp. 2s, T.&P. Sur. .... T.D. 2,046 ft.

Tribal Oil Co.'s No. 5 M. M. Edwards, 330 ft. from S line and 990 ft. from the W line of Sec. 16, Blk. 33, Twp. 2s, T.&P. Sur. ..... Location.

**HOWARD COUNTY**

Humble Oil & Ref. Co.'s No. 3 W. R. Settles, 1,650 ft. from W line and 330 ft. from the S line of Sec. 132, Blk. 29, W.&N.W. Sur. ..... Drlg. 1,646 ft.

Continental Oil Co.'s No. 2 Gilbreath, 330 ft. from N line and 660 ft. from E line of Sec. 24, Blk. 33, Twp. 2s, T.&P. Sur. ..... Location.

**L. C. Harrison et al's No. 2 Texas Land & Mortgage Co., 2,310 ft. from E line and 330 ft. from the S line of Sec. 4, Blk. 30, Twp. 1s, T.&P. Sur.** ..... Location.

Plymouth Oil Co.'s No. 11 Kloh, 1,320 ft. from S line and 660 ft. from W line of Sec. 5, Blk. 32, Twp. 2s, T.&P. Sur. ..... Rig up.

**Permian Pacific Pet. Co.'s No. 1 Capps, 330 ft. from SW cor. of Sec. 17, Blk. 29, Twp. 1n, T.&P. Sur.** ..... Location.

Plymouth Oil Co.'s No. 10 Kloh, 660 ft. from S line and 660 ft. from W line of Sec. 5, Blk. 32, Twp. 2s, T.&P. Sur. ..... T.D. 1,625 ft.

**Joe Rusk et al's No. 3 G. M. Dodge, 330 ft. from the N line, 330 ft. from the E line, Sec. 9, Blk. 30, Twp. 1s, T.&P. Sur.** ..... Rig up.

Shell Pet. Corp.'s No. 4-A Kloh, 990 ft. from S line and 660 ft. from E line of Sec. 13, Blk. 33, Twp. 2s, T.&P. Sur. ..... Drlg. 2,180 ft.

**Sinclair Prairie Oil Co.'s No. 1 Perry Jones, 2,310 ft. from W and 330 ft. from N. Sec. 9, Blk. 30, Twp. 1s, T.&P. Sur.** ..... Drlg. 2,400 ft.

**Sinclair Prairie Oil Co.'s No. 12 Dodge, 330 ft. from S line and 2,360 ft. from W line, Sec. 11, Blk. 30, Twp. 1s. T.&P. Sur.** ..... Rig up.

**Sloan & Lewis' No. 1 Daniell, 2,475 ft. from E and 330 ft. from S of Sec. 18, Blk. 31, Twp. 1n, T.&P. Sur.** ... Drlg. 3,155 ft.

Southern Oil Co.'s No. 1 Denman, 2,310 ft. from N line and 330 ft. from W line of Sec. 10, Blk. 30, Twp. 1s, T.&P. Sur. ..... Cleaning out after shot; T.D. 2,818 ft.

Southern Oil Co.'s No. 1 Frazier, 660 ft. from S line and 660 ft. from W line of Sec. 4, Blk. 33, Twp. 10s, T.&P. Sur. ..... Rig up.

**IRION COUNTY**

**Williams-Short's No. 1 Gentry, 2,200 ft. from N line and 2,080 ft. from W line of Sec. 1, Blk. 3, H.&T.C. Sur.** .. S.D. 935 ft.

Melrose Oil Co.'s No. 1 J. D. Sugg, 1,700 ft. from the E line and 308 ft. from the S line of Sec. 25, Blk. 2, E.&T.C. Sur. ... Location.

**JONES COUNTY**

C. P. Campbell's No. 3 Herndon, 1,450 ft. from S line and 800 ft. from W line, Sec. 6, M.E.P.&P. Sur. ... Swabbed 5 bbls. of fluid per hour; T.D. 2,497 ft.

Clifton & Braselton et al's No. 1 Cassey, 200 ft. from N and W lines of SE cor. of Sec. 15, Blk. 15, T.&P. Sur. ... S.D. 450 ft.

Elmer Close et al's No. 1 A. B. Faulks, 330 ft. from N line and 330 ft. from W line of Subdiv. No. 37, Henry Millard Sur. ... Drlg. 1,605 ft.

Condor Pet. Co.'s No. 3 Sayles, 650 ft. from N line and 960 ft. from W line of Sec. 3, Blk. 20, T.&P. Sur. ... Drlg. 1,448 ft.

Guthrie & Lancaster's No. 1-B Campbell, 330 ft. from N and 2,376 ft. from E line of Sec. 15, Blk. 19, T.&P. Sur. ... S.D. 680 ft.

Southern Oil Corp.'s No. 2 Williams, 330 ft. from S and W line of Sec. 17, Blk. 19, T.&P. Sur. ... Drlg. 85 ft.

Texas Inland Oil Co.'s No. 1 J. E. Sellers, 200 ft. from NE of NW cor. of W. Dick Sur. No. 241, Abst. No. 167 ... Underreaming; T.D. 1,752 ft.; filled up 1,000 ft. of oil in 5 hrs.

**LOVING COUNTY**

R. L. Allen's No. 2 fee, 4,290 ft. from NE line, 990 ft. from SE line, Sec. 32, Blk. 33, H.&T.C. Sur. ... Location.

R. L. Allen's No. 3 fee, 4,290 ft. from NE line, 990 ft. from NW line, Sec. 32, Blk. 33, H.&T.C. Sur. ... Location.

R. L. Allen's No. 4 fee, 4,290 ft. from NE line, 330 ft. from NW line, Sec. 32, Blk. 33, H.&T.C. Sur. ... Location.

The California Oil Co.'s No. 8 Reagan-McElvain, 330 ft. from NW and SW lines of Sec. 34, Blk. 1, W.&N.W. Sur. ... T.D. 895 ft.

Eppenauer Drlg. Co.'s No. 2 Hammill & Ellis, 410 ft. from NW and 796 ft. from NE lines of Sec. 2, Blk. 1, W.&N.W. Sur. ... Cellar.

William Little's No. 1 Reichard & Dehle, 1,320 ft. from NE and 1,120 ft. from SE line of Sec. 92, Blk. 1, W.&N.W. Sur. ... T.D. 4,275 ft.; flowing 50 bbls. daily.

H. W. Martin's No. 4 Wheat Ramsey, 990 ft. from SE and SW lines of Sec. 33, Blk. 1, W.&N.W. Sur. ... S.D. 600 ft.

Sinclair Prairie Oil Co.'s No. 3 Bell, 410 ft. from SE and 1,025 ft. from NE of Sec. 91, Blk. 1, W.&N.W. Sur. ... T.D. 4,267 ft.; swabbing 180 bbls.

J. F. Slack's No. 1 Covey, 2,310 ft. from NE line and 330 ft. from SE line of Sec. 3, Blk. 2, W.&N.W. Sur. ... Drlg. 200 ft.

**PECOS COUNTY**

Mack T. Anderson's No. 1 McKenzie, 660 ft. from S line and 660 ft. from W line of Sec. 1, Blk. 604 ... Drlg. 620 ft.

M. D. Bryant et al's No. 1 Reed, 169 ft. from E line and 194 ft. from N line of the N half of the 8-acre tract, Bob Reed Sur. ... S.D. 1,290 ft.; flowing 30 bbls. oil per hour.

Cardinal Oil Co.'s No. 17-E Tippett, 150 ft. from E line of W half and 730 ft. from N of No. 5-E, Sec. 40, Blk. 194, G.C.&S.F. Sur. ... Waiting on orders; T.D. 481 ft.

Culberson Bros.'s No. 15-B Monroe, 725 ft. from N line and 1,380 ft. from E line of Sec. 39, Blk. 194, G.C.&S.F. Sur. ... Location.

A. Fasken's No. 1 Reed, 169 ft. from W line and 194 ft. from N line of the N half of the 8-acre tract, Bob Reed Sur. ... S.D. 1,115 ft.

Humble Oil & Ref. Co.'s No. 1 White, Baker, 1,320 ft. from N and E lines of Sec. 44, Blk. Z, T.C. Sur. ... Drlg. 9,496 ft.; topped Ellenburger at 9,385 ft.

Mid-Kansas Oil & Gas Co.'s No. 18 Smith-Taylor, 1,296 ft. from S line, 1,320 ft. from W line, Sec. 33, Blk. 194, G.C.&S.F. Sur. ... Location.

Mid-Kansas Oil & Gas Co.'s No. 24 Smith-Taylor, 350 ft. W of S half of Turner Tract No. 1, Sec. 33, Blk. 194, G.C.&S.F. Sur. ... Road.

Mid-Kansas Oil & Gas Co.'s No. 25 Smith-Taylor, 344 ft. W of SE cor. of S half of Turner Trace No. 1, Sec. 33 ... S.D. 750 ft.

Mid-Kansas Oil & Gas Co.'s No. 26 Smith-Taylor, 395 ft. S and 344 ft. E of SE cor. of S half of Tract No. 1 ... Cellar.

Mid-Kansas Oil & Gas Co.'s No. 1 Turner, 350 ft. from N line and 350 ft. from W line of Turner Sur. No. 3 ... S.D. 590 ft.

Mid-Kansas Oil & Gas Co.'s No. 12-H Yates, 408 ft. S of N line of Sec. 33 and 344 ft. W of SE cor. of S half of Tract No. 1 ... Location.

Mid-Kansas Oil & Gas Co.'s No. 13-H Yates, 408 ft. S of N line of Sec. 33 and 344 ft. E of SE cor. of S half of Tract No. 1 ... Location.

Mid-Kansas Oil & Gas Co.'s No. 38-A Yates, 250 ft. E and 205 ft. S from the NE cor. of Turner Tract No. 3 in Sec. 34¼, I. G. Yates Sur. ... Location.

Mid-Kansas Oil & Gas Co.'s No. 39-A Yates, 150 ft. N and 250 ft. W of the NW cor. of Turner tract No. 4, in Sec. 34¼, I. G. Yates Sur. ... Cellar.

Mid-Kansas Oil & Gas Co.'s No. 40-A Yates, 344 ft. from E line and 395 ft. from N of SE cor. of S half of Turner Tract No. 1 ... S.D. 680 ft.

Mid-Kansas Oil & Gas Co.'s No. 34-B Yates, 1,088 ft. from N line and 498 ft. from W line of Sec. 61, I.&G.N. Sur. ... S.D. 1,107 ft.

Simms Pet. Co.'s No. 3 A. J. Devlin, 330 ft. from the N line and 330 ft. from the E line of the most easterly NE cor. of Sec. 2, John D. Duval Sur., Abst. No. 3,824 ... Location.

**REAGAN COUNTY**

Big Lake Oil Co.'s No. 15-C University, Sec. 12, Blk. 2 ... Drlg. 105 ft.

E. P. Kirschner and White's No. 1 W. A. White and McIntosh, 720 ft. from E and 800 ft. from N of Sec. 1,223, E.L.R.R. Sur. ... T.D. 2,765 ft.

**REEVES COUNTY**

Grisham-Hunter Corp.'s No. 1 fee, 1,320 ft. from N line, 1,320 ft. from the E line of Sec. 10, Blk. 58, Twp. 8, T.&P. Sur. ... Drlg. 1,150 ft.

Hugo Freels' No. 1 B. Greenman, 330 ft. from NE line and 331 ft. from SE line of Sec. 31, Blk. 3, H.&G.N. Sur. ... Shot 220 qts. from 3,778-3,980 ft.; no results; S.D.; T.D. 3,985 ft.

C. H. Lockhart et al's No. 1 W. D. Johnson, 330 ft. from N line and 330 ft. from W line of Sec. 3, Blk. C-13, P.S.L. Sur. ... Moving in material.

**RUNNELS COUNTY**

Agnew & Sons' No. 2 Fowler, 1,165 ft. from S and 150 ft. from W of NE cor. of Blk. 23, N. Travis Sur. ... T.S. 2,533 ft.; 150 ft. of oil in hole; T.D. 2,549 ft.

Agnew and Currie's No. 1 H. E. Wade, 2,640 ft. from N line and 320 ft. from E line of Sec. 24, Domingo Diaz Sur. No. 532 ... Set surface csg.; T.D. 33 ft.

Anderson et al's No. 1 W. F. James, 330 ft. from N and W lines of Subdiv. No. 20, Norvell Travis Sur. ... Spudded and S.D.

Castor & Anderson et al's No. 1 W. F. James, 174 ft. from W line of Subd. No. 36, Norvell Travis Sur. No. 533 ... S.D. 910 ft.

Golden Pet. Corp.'s No. 2 McMillan, 780 ft. from W and 330 ft. from N of Subdiv. No. 32, N. Travis Sur. No. 533 ... Aver. 80 bbls.; may drill deeper; T.D. 2,582 ft.

Melrose Oil Co.'s No. 1 L. P. Woods, 150 ft. from NE lines and 3,475 ft. from W line of survey, Willett Holmes Sur. No. 100 ... Drlg. 1,250 ft.

W. S. Sawyer et al's No. 1 Giesecke, 1,211 ft. from N and 4,606 ft. from E lines of survey, Blk. 131, James Hughes Sur. ... T.D. 2,033 ft.; showing oil and gas.

Prairie Oil & Gas Co.'s No. 1 T. B. Wade, 2,597 ft. from N and 2,140 ft. from E line of Subdiv. No. 16, Norvel Travis Sur. ... Drlg. 2,150 ft.

R. Tucker et al's No. 5 McMillan, 350 ft. from N and W lines of that part of Subd. No. 32 in the D. Diaz Sur. ... Drlg. 900 ft.

F. D. Williams' No. 1 J. L. Elkins, 2,325 ft. from E and 1,300 ft. N of SW cor. of Blk. 12, but in Blk. 13, N. Travis Sur. No. 533 ... S.D. 1,400 ft.

**SCHLEICHER COUNTY**

John M. Cooper et al's No. 1 Bert Page, 1,290 ft. from N line, 1,470 ft. from W line of Sec. 40, Blk. L, G.H.&S.A. Sur. (old well being drilled deeper) ... Fishing for tools; T.D. 5,055 ft.

**SCURRY COUNTY**

Coffield & Guthrie's No. 1 Bryce, 330 ft. from S and W lines of Sec. 133, Blk. 97, H.&T.C. Sur. (old well being drilled deeper) ... Drlg. 2,265 ft.

**TERRELL COUNTY**

H. H. Sides' No. 1 Phelps, 2,157 ft. from N line and 2,483 ft. from the W line of Sec. 5, Blk. 4-A, G. W. Turley Sur. ... S.D. 5,635 ft.

**UPTON COUNTY**

Powell-Gap Oil Co.'s No. 1 J. F. Lane, 1,320 ft. from W line of Sec. 1, G.C.&S.F. Sur. ... T.D. 2,175 ft.; pumped 115 bbls. per day.

Gulf Prod. Co.'s No. 103 McElroy, 1,980 ft. from S and 660 ft. from W, Sec. 197, Blk. F, C.C.S.D.&R.G.N.G. Sur. ... Drlg. 10,189 ft.

Texas Pacific Coal & Oil Co.'s No. 1-C J. H. Sherk, 1,650 ft. from S and 330 ft. from W, Sec. 1, Blk. 3-B, M.K.&T. Sur. ... Testing; T.D. 2,631 ft.

Texas Pacific Coal & Oil Co. and Humble Oil & Ref. Co.'s No. 13 J. H. Shirk, 990 ft. from the S line and 330 ft. from the E line of Sec. 1, Blk. 3, M.K.&T. Sur. ... Drlg. 1,770 ft.

Theabotal Oil Co.'s No. 2 J. F. Lane, 1,650 ft. from N and 990 ft. from E of Sec. 36, Blk. 1, M.K.&T. Sur. ... S.D. 250 ft.

Williams & Williams Drlg. Co.'s No. 1 Robbins, 1,800 ft. from S and 1,900 ft. from E, Sec. 4, G.C.&S.F. Sur. ... S.D. 1,987 ft.

**VAL VERDE COUNTY**

South-Western Exploration Co.'s No. 1 E. K. Fawcett, 2,310 ft. from S and 2,310 ft. from E, Sec. 14, Blk. L, G.C.&S.F. Sur. ... Rig up.

**WARD COUNTY**

Alexander's No. 1 Richter, 1,650 ft. from NW, 1,170 ft. from NE line of Sec. 27, Blk. 33, H.&T.C. Sur. ... S.D. 1,460 ft.

Atlantic Oil & Prod. Co.'s No. 17 Johnson, 1,650 ft. from NE line and 1,650 ft. from SE line of Sec. 9, Blk. 34, H.&T.C. Sur. ... Drlg. 1,483 ft.

Atlantic Oil & Prod. Co.'s No. 18 W. D. Johnson, 1,650 ft. from the NE line of Sec. 9, Blk. 34, H.&T.C. Sur. ... Spudding.

L. G. Bradstreet et al's No. 1 Lee Monroe, 2,310 ft. from NE and 330 ft. from SE lines of Sec. 77, Blk. 34, H.&T.C. Sur. ... S.D. 1,037 ft.

California Oil Co.'s No. 5 York, 1,650 ft. from S and 990 ft. from SW, Sec. 10, Blk. 34, H.&T.C. Sur. ... S.D. 2,526 ft.

California Oil Co.'s No. 2 Durgin, 330 ft. from SW and 330 ft. from SE of Sec. 15, Blk. 34, H.&T.C. Sur. ... Testing; T.D. 2,526 ft.

California Oil Co.'s No. 7 York, 1,650 ft. from SW line and 2,310 ft. from SE line of Sec. 10, Blk. 34, H.&T.C. Sur. ... S.D. 2,304 ft.

C. C. Duffey et al's No. 1 Llano-Sloan, 1,650 ft. from NW and NE lines of Sec. 34, H.&T.C. Sur. ... Drlg. 1,100 ft.

Gulf Prod. Co.'s No. 28 Hutchins, 2,310 ft. from S line and 330 ft. from W line of Sec. 4, Blk. F, G.M.M. B.&A. Sur. ... Drlg. 2,060 ft.

Gulf Prod. Co.'s No. 27 Hutchins, 2,310 ft. from N line and 330 ft. from W line of Sec. 4, Blk. F, G.M.M.B.&A. Sur. ... Set csg. 2,549 ft.

Gulf Prod. Co.'s No. 43 O'Brien, 2,310 ft. from N line and 990 ft. from W line, Sec. 17, Blk. F, G.M.M. B.&A. Sur. ... Drlg. 2,780 ft.

Gulf Prod. Co.'s No. 44 O'Brien, 2,310 ft. from N line, 330 ft. from W line of Sec. 17, Blk. F, G.M.M.B.&A. Sur. ... S.D. for repairs; T.D. 2,552 ft.

Gulf Prod. Co.'s No. 45 O'Brien, 1,650 ft. from S line and 330 ft. from E line of Sec. 17, Blk. F, G.M.M. B.&A. Sur. ... Drlg. 2,000 ft.

Gulf Prod. Co.'s No. 46 O'Brien, 1,650 ft. from S line and 990 ft. from E line of Sec. 17, Blk. F, G.M.M. B.&A. Sur. ... Drlg. 1,400 ft.

Humble Oil & Ref. Co.'s No. 3 Richter, 2,316 ft. from NE line and 1,698 ft. from SE line of Sec. 27, Blk. 34, H.&T.C. Sur. ... S.D. 517 ft.

Jack Leidecker et al's No. 1 Shell-Sloan, 990 ft. from NE and 330 ft. from NW of Sec. 15, Blk. 5, H.&T.C. Sur. ... Drlg. 2,980 ft.

Rector Oil Co.'s No. 1 Lee Monroe, 660 ft. from NE and 660 ft. from SE of Sec. 62, Blk. 33, H.&T.C. Sur. S.D. 4,661 ft.

Richardson's No. 1 Johnson, 330 ft. from NE line and 2,310 ft. from NW line of Sec. 32, Blk. 34, H.&T.C. Sur. ... Location.

Sinclair Prairie Oil Co.'s No. 5 Archenhold, 2,310 ft. from SE and 2,310 ft. from SW of Sec. 28, Blk. 5, H.&T.C. Sur. ... Drlg. 1,290 ft.

Tex-Mex Pet. Corp.'s No.2-B Shell-Sloan, 2,310 ft. from NE and 990 ft. from NW, Sec. 16, Blk. 5, H.&T.C. Sur. ... Cellar.

Tex-Mex Pet. Corp. et al's No. 2 Cal-Archenhold, 990 ft. from NE and 330 ft. from SE, Sec. 33, Blk. 5, H.&T.C. Sur. ... Drlg. 2,800 ft.

Tex-Mex Oil Co.'s No. 3-B Shell-Sloan, 1,650 ft. from NE and 330 ft. from NW lines of Sec. 16, Blk. 5, H.&T.C. Sur. ... Drlg. 2,530 ft.

Westex Oil Co.'s No. 1 Cynthia Monroe et al, 330 ft. from SE and 330 ft. from SW lines of NE 80 acres of Sec. 2, J. V. Borders Sur. ... Drlg. 885 ft.

**WINKLER COUNTY**

Colonial Oil Co.'s No. 4 Amerada-Scarborough 990 ft. from N line and 990 ft. from E line of Sec. 18, Blk. 74, P.S.L. Sur. ... Drlg. 2,875 ft.

Magnolia Petroleum Co.'s No. 2 Walton, 330 ft. from N and 330 ft. from E, Sec. 19, Blk. 74, P.S.L. Sur. ... Drlg. 2,633 ft.

Magnolia Pet. Co.'s No. 5 Scarborough, 1,650 ft. from N line and 370 ft. from E line of Sec. 18, Blk. 74, P.S.L. Sur. ... Drlg. 1,885 ft.

McCurdy & Easter's No. 1 Scarborough, 1,650 ft. from W and 2,310 ft. from S, Sec. 1, Blk. 77, P.S.L. Sur. ... Rigging up and S.D.

Sid Richardson's No. 2-B Scarborough, 2,310 ft. from E line and 990 ft. from S line of Sec. 18, Blk. 74, P.S.L. Sur. ... Drlg. 2,942 ft.

Sid Richardson's No. 5-A Scarborough, 330 ft. from W and 990 ft. from S. Sec. 1, Blk. 32-C, P.S.L. Sur. ... Moving in machine.

Richardson et al's No. 3 Scarborough, 150 ft. from S line and 2,310 ft. from W line of Sec. 1, Blk. C-22, P.S.L. Sur. ... Drlg. 2,540 ft.

Richardson's No. 4 Scarborough, 330 ft. from N line and 2,310 ft. from W line of Sec. 1, Blk. 77, P.S.L. Sur. ... Drlg. 1,265 ft.

Richardson's No. 5 Scarborough, 150 ft. from S line and 1,740 ft. from W line of Sec. 1, Blk. C-22, P.S.L. Sur. ... Material.

Sinclair Prairie Oil Co.'s No. 1-C Scarborough, 2,310 ft from W and 102½ ft. S of SE cor. Sec. 1, Blk. 32-C, P.S.L. Sur. ... Cleaning out; T.D. 3,035 ft.

Richardson's No. 6 Scarborough, 330 ft. from N line and 2,310 ft. from W line, Sec. 18, Blk. 174, P.S.L. Sur. .. Rig up.
Sinclair Prairie Oil Co.'s No. 2-C State-Scarborough, 102 ft. N and 1,650 ft. W of NE cor. of Sec. 1, Blk. 77, P.S.L. Sur. ..... Drlg. 2,645 ft.
Tide Water Oil Co.'s No. 2 Scarborough, 105 ft. from S line and 990 ft. from E line of Sec. 1, Blk. C-22, P.S.L. Sur. ..... Drlg. 2,918 ft.

## Wildcat Operations in Southwest Texas

(Continued from Page 114)

Houston Oil Co.'s No. 1-B Neihaus, 330 ft. from N and E line of 100-ac. tract ..... Moving in material.
Elbert Jeanes' No. 1 G. L. Courtney, 1,600 ft. from E line, 330 ft. from S line of tract, G. A. Kerr Sur., 1½ miles NE of Pettus ..... Rigging up.
McLain et al's No. 3 Laura Weiss, B.&B. Sur., 660 ft. E of No. 1 ..... T.D. 100 ft.; S.D.
Phillips Pet. Co.'s No. 1 Morgan, 4,950 ft. from W, 3,270 ft. from N lines of 13,930-ac. tract, Eyles Sur. T.D. 6,090 ft.; circulating.

### BELL COUNTY

Gus Winston et al's No. 3 Warrick, 100 ft. N of James Scroggins' No. 1 Warrick, in Elijah Ingram Sur. .. Drlg. black shale 3,198 ft.; no report.

### BEXAR COUNTY

Joe Beckley's No. 1 fee, 3,100 ft. W and 150 ft. S at right angles from most northerly cor. of Morales Sur. (2 mi. SW of San Antonio) ..... Drlg. 605 ft.
A. M. Blume's No. 1 H. A. Ridder, E offset to Blume's No. 2 Ridder, J. M. Barrera Sur. ..... Derrick blew down.
A. M. Blume's No. 2 Louis Ridder, approximately 2,350 ft. N of R.R., 700 ft. E of W line of J. M. Baerera Sur. No. 58 ..... T.D. 1,630 ft.; S.D.
Keiffer et al's No. 1 Ruiz, SE cor. of 82-ac. tract in F. Rowland Sur. No. 48 ..... T.D. 1,715 ft.; S.D.
Dingman & Russell's No. 1 R. J. Coffey, 1,328 ft. from SE line, 1,086 ft. from SW line of 420-acre tract in Rodrigues Sur. ..... T.D. 1,326 ft.; P.B. 1,017 ft.; bailing.
S. E. Gantt's No. 1 A. B. Stephen, 2,650 ft. from SW line, 740 ft. from SE line of P. W. Hays Sur. .... Drlg. 452 ft.
Thos. Gorton's No. 1 Edward Jackel, 600 ft. from N line, 300 ft. from E line of tract in J. Ward Sur. .. T.D. 500 ft.; S.D.
George L. O'Neill's No. 1 Neimann in Juan Montes Sur. No. 6 ..... T.D. 1,425 ft.; set 300 ft. 4-in. liner.
J. W. Johnson's No. 1 Willow Springs, 150 ft. from N and W lines of lease in B. Munos Sur. No. 151..... T.D. 1,940 ft.; S.D.; made salt wtr. and some oil.
Fred A. Perrenot's No. 1 Russell, 750 varas from NE line, 54 varas from NW line of 500-ac. tract in Rodrigues Sur. ..... T.D. 1,315 ft.; standing.
N. H. Price's No. 1 Barragas, 150 ft. from S and E lines of 50-ac. tract ..... T.D. 419 ft.; S.D.; to be comp by H. E. Lewis.
N. S. Powell's No. 1 M. Sanner, 400 ft. from E line, 5,280 ft. from N line of 128-ac. tract in Ruiz Sur. No. 47 ..... Drlg. shale 907 ft.
Schneider & Reese's No. 1 Clausson ..... S.D. 1,675 ft.
C. A. Smith's No. 1 Henry Lamb, 750 ft. from N and E lines of Lamb farm, in de la Garza grant ..... T.D. 982 ft.; show of oil and gas from 968-82 ft.; W.O.C.
A. A. Wietzel's No. 1 fee, F. Ricardo Sur. ..... T.D. 1,795 ft.; S.D.
Trawalter Oil Co.'s No. 2 fee, Jett Sur. ..... Drlg. 1,510 ft.

### BURLESON COUNTY

Brush & Hays' No. 1 C. W. Young, 150 ft. from SW line and 780 ft. from SE line of 140-ac. tract in Bird Sur. (7 mi. SE of Caldwell) ..... T.D. 309 ft.; S.D.

### CALDWELL COUNTY

S. S. Cargill's No. 2 Damereau, 150 ft. from W line, 450 ft. from N line of D. Cooper Sur. ..... T.D. 2,261 ft.; top Edwards 2,260 ft.; show oil; setting csg.
F. H. Etheridge et al's No. 1 Perry, 300 ft. from SE line and 300 ft. from NE line of 27-ac. lease in P. Martinez Sur. (N of Lytton Springs) ..... Rigging up and S.D.
Hinton & Dodson's No. 1 Carrie Lipscomb, 150 ft. from S line of 56.6-ac. tract and 150 ft. from E line (road) on N end of old Luling Field in Guadalupe Co. Sur. ..... T.D. 2,707 ft.; abd.
Wilford Keen et al's No. 1 Wm. Ewalk, 150 ft. from E line and 150 ft. from N line of 126-ac. tract, or 1,650 ft. from N and 1,300 ft. from E lines of Jas. George Sur. (3½ mi. from Lockhart) ..... Drlg. shale 1,880 ft.
J. Edward Mills et al's No. 1 Emma Johnson, 1,650 ft. from N line and 4,250 ft. from W line of Jas. Pinchback Sur. (6 mi. SE of Lockhart) ..... Sand 2,111 ft.; slight show oil; S.D.
H. J. Porter's No. 1 A. Carter, 1,938 ft. from NE line and midway between NW and SE lines of 32-acre farm in G. Pace Sur. (NE of Lytton Springs) ..... T.D. 1,813 ft.; abd.
Webster Oil & Gas Co.'s No. 1 Robinson, 770 ft. S and E from NW cor. of 100-ac. tract in John A. Neill Sur... S.D. 2,290 ft.

### CALHOUN COUNTY

Continental Oil Co.'s No. 1 American Natl. Realty Co., center of NE of Sec. 6, Blk. C, Calhoun Cattle Co., Subd. of Port O'Connor pasture (9 mi. SE of Seadrift) ..... Moving in rig.
Heep Oil Corp.'s No. 1 P. Welder, J. M. Rice Sur. ..... Coring 5,565 ft.
Heep Oil Corp.'s No. 2 P. Welder, Day Land & Cattle Co., A-228, center of Sur., 2¼ mi. W of SW of McKinney, 650 ft. NW line and 3,950 ft. SW line of Sur. (4 mi. W of Clark) ..... T.D. 915; W.O.C.

### DEWITT COUNTY

Keystone Royalties' No. 1 L. T. Burns, 1,100 ft. from W and 600 ft. from S line of 303-ac. tract in L. G. Belcher Sur. ..... Derrick.

### DUVAL COUNTY

Cecil Best's No. 1 Parr, 1,320 ft. from SE line and 990 ft. from NE line of Sur. 134 (10 miles W and 3 miles N of San Diego) ..... T.D. 3,190 ft.; S.D.
Buffalo-Texas Drlg. Synd., Inc.'s No. 1 Escobar, 700 varas from W line, 1,000 varas from N line of 930-ac. tract in Francisco grant ..... Coring 2,386 ft.
Chiquita Oil Co.'s No. 1 Richardson, 330 ft. from N and E lines of Sec. 5 ..... T.D. 1,751 ft.; comp. 8,000,000 ft. gas, 225 lbs. R.P.
Continental Oil Co.'s No. 1 R. Driscoll Est., 180 ft. from S, 1,370 ft. from E lines of lease, Sec. 448 .. T.D. 3,448 ft.; comp. 12 bbls. per hr. ½-in. choke, 30 per cent water, 800 lbs. csg., 650 lbs. tubing.
Continental Oil Co.'s No. 2-A Clara, Driscoll Sevier, 2,675 ft. S and 1,000 ft. from E line of Sec. 448 ..... Location.
Jones & Carragy's No. 1 J. W. Kidd, 330 ft. from S line and 330 ft. from E line of E 40-ac. of SE of Sur. 56 ..... T.D. 2,222 ft.; abd.
W. C. McBride's No. 1 Hagist, 330 from N and E lines of SE 80 ac. of Sec. 1 ..... Location.
South Coast Oil Co.'s No. 1 C. M. Robinson, Sec. 114 .... Location.
Sun Oil Co.'s No. 1 Moreno, 330 ft. from E line and 2,000 ft. from S line of NW cor. of H.&W. Sur. 537, in Sec. 540 (5 mi. S of San Diego) ..... Rigging up.
Witherspoon et al's No. 1, Richardson Sur. No. 5 ..... T.D. 1,005 ft.; S.D.
Louis Yeager's No. 1 Yeager, 694 ft. from W line, 1,527 ft. from S line of Sur. No. 38 ..... T.D. 865 ft.; testing.

### EDWARDS COUNTY

Love and Evans' No. 1 Steve Brown, 660 ft. from N and E lines of Sec. 66, G.W.T.&P.R.R. Sur., 15 miles W of Rock Springs ..... S.D. 3,002 ft.

### FRIO COUNTY

Amerada Pet. Co.'s No. 2 Halff & Oppenheimer, begin. at most easterly N cor. of John H. Gibson Sur. No. 16, thence SE along NE line of Sur. 2,100 ft., thence SW at right angles 800 ft. (4 mi. SW of Pearsall) .. Rigging up.

### GILLESPIE COUNTY

Dorre et al's No. 3 Lindig ..... Drlg. 137 ft.
Powers et al's No. 2 Lindig, 12,700 ft. from S line, 1,333 ft. from W line of Maria Josephine Guerrera Sur. ..... Location.

### GOLIAD COUNTY

H. H. Weinert's No. 1 Grady Smith, 330 ft. from NW line and 330 ft. from SW line of 142-ac. tract in B. & B. Sur. No. 25 (N part of county) ..... Drlg. 3,520 ft.

### GUADALUPE COUNTY

J. E. Clark's No. 1 M. T. Howell, 9,050 ft. from N line of Howell tract and 1,588 ft. S of highway and 200 ft. from W line of 200-ac. tract of Darst Sur. No. 19 ..... Drlg. shale 1,209 ft.
M. W. Eiser's No. 2 Wells, 1,700 ft. from S line, 200 ft. from W line of Blk. 3, Subd. 1, J. de la Baume Sur. ..... Location.
Holderfield et al's No. 1 Reed ..... Drlg. shale 497 ft.
Adolph Seideman's No. 1 Seideman, 280 ft. from NE line, 470 ft. from NW line of Mrs. Adolph Seideman 147.5-ac. tract (Subd. 116) in Antonio Maria Esnaurriser Sur. No. 11 ..... T.D. 2,730 ft.; S.D.

### HAYS COUNTY

J. C. Crowder's No. 1 Burnett, 2,370 ft. from E line, 1,400 ft. from N line of tract in J. Ingram Sur. .... T.D. 430 ft., set csg.; S.D.

### HIDALGO COUNTY

D. D. Oil Co.'s No. 1 Mrs. L. George, 330 ft. from N and W lines of 40-ac. tract in Share 13, Porcion 41.. Location.
Davis & Harrison's No. 1 Lula George, 300 ft. from S and 700 ft. from E lines of Tract 13, Porcion 41, Ancient Jurisdiction of Reynosa. ..... Set surface csg.
Otto Woods' No. 1 John Lawrence, 530 ft. from W, 300 ft. from N line of Tract 274, Porcion 39, Ancient Jurisdiction of Reynosa ..... Set surface csg.
Union Sulphur Co.'s No. 1 American Rio Grande L. & I. Co., 400 ft. S and W of NE cor. of Lot 229, Blk. 59 (½ mi. N of Mercedes) ..... Coring 4,721 ft., hard sandy shale.

### JIM WELLS COUNTY

Magnolia Pet. Co.'s No. 3 Seeligson, 330 ft. from S line and 1,320 ft. W of No. 2 in V. Canales Sur. No. 218.. T.D. 3,238 ft.; set csg.
Plymouth Oil Co.'s No. 1 Cuero Cattle Co., 330 ft. from E and W lines of H.T.&B. Sur. No. 7, 2½ miles W from Alfred ..... Rigging up.
Putnam and Bode's No. 1 McCarley, 660 ft. from SE line and 1,500 ft. from NE line of 300-ac. tract, Blk. A. of W. H. Bode Subdivision of Wallace D. Wade Ranch ..... Show gas 2,806 ft.; drlg. 2,862 ft.
C. H. Robertson's No. 1 C. Mull, 330 ft. N of N end of division line between Lots 4-A and 5-A of Seefelds farm lots, or 1,300 ft. from W line, 300 ft. from N line of Pointevant Sur. No. 205 ..... T.D. 3,509 ft.; abd.

### KARNES COUNTY

Magnolia Pet. Co.'s No. 2 Guy Porter, 1,130 ft. from W line and 330 ft. from E line of Brooks & Burleson Sur. ..... T.D. 3,648 ft.; comp. 152 bbls. 12 hrs.
George Ray's No. 1 Radford, 666 ft. from SW and 3,422 ft. from SE lines of 753-ac. tract in Nichols Sur. (4 miles NE of North Pettus Field) ..... Drlg. 3,762 ft.
C. J. Webster's No. 1 J. B. Cannon, 1,140 ft. from N line, 250 ft. from E line of 80-ac. tract in Lambrano Sur. ..... T.D. 1,790 ft.; standing; may deepen to Yegua.

### KENDALL COUNTY

Martin's No. 1 Houston, Thomas Leople Sur. No. 761 .... Top black shale 1,028 ft.; T.D. 1,985 ft.; to deepen.
A. P. Pierce's No. 1 Werner, in SW cor. of 40-ac. tract, 150 ft. from S and W lines of J. F. Torrey Sur. .... T.D. 992 ft.; standing.

### KERR COUNTY

Edminston & Walker's No. 1 Whitworth, 1,160 ft. from S line and 1,333 ft. from E line of Sec. 1,439 of the H.E.&W.T. Sur. ..... Preparing to spud.
Jeff Love and Eastland Oil Co.'s No. 5-E Jeff Love, 1,500 ft. SE of No. 1 and 1,580 ft. from SE cor. and 300 ft. from N line of Sec. 1,591 ..... Location.
G. F. Schreiner's No. 3 Love, 1,420 ft. from W line, 1,260 ft. from S line of Sur. No. 1,594 ..... Location.
Van Duyn & Moore's No. 1 Nowlin, 2,000 ft. from E line, 2,200 ft. from N line of Jas. R. Bettner Sur. No. 99 ..... T.D. 1,040 ft.; standing.

### KLEBERG COUNTY

J. S. Brown's No. 1 Antone Dietz, Sec. 7, Hotch estate .. T.D. 2,845 ft.; S.D.
Harry Clark's No. 1 V. J. Kivlin, 360 ft. from E line, 400 ft. from S line of Sec. 39, Blk. 3, Kleberg Town & Improvement Co. Sur. ..... T.D. 3,350 ft.; D.S. test 2,315-19 ft.; four joints mud, oil and sand; S.D.

### LASALLE COUNTY

G. O. Ball's No. 1 J. M. Martin, 330 ft. from S and W lines of Martin 485.6-ac. tract, Sur. 683 ..... Moving in.

### LEE COUNTY

Jas. E. Pederson's No. 1 Turner, David Hudson Sur. .... Rigging up and S.D.
H. A. Sherlack's No. 1 Otto, 736 ft. from NW line, 1,310 ft. from NE line of 57.5-ac. tract in Thomas Morrow Sur. ..... Drlg. 1,250 ft.; no report.

### LIVE OAK COUNTY

Holmes & Goodwin's No. 1 fee, 1,000 ft. from N line and 330 ft. from W line of 326-ac. tract in Brigada Haughty Sur. ..... Drlg. shale 570 ft.
Witherspoon Oil Co.'s No. 2 H. Clements, 100 ft. S of No. 1 junked hole, Eliz. Jordan Sur. ..... Cemented 7-in. csg. at 615 ft.; W.O.C.
Ike Taylor's No. 2 Griffith, 1,300 ft. from E line and 1,151 ft. from S line of lease in Tract 5, D. Osborne Sur. ..... Rigging up.

### MAVERICK COUNTY

Ollie Wright's No. 1 L. Little, 500 ft. from N line, 3,800 ft. from E line of Potter Sur. No. 65 (10 mi. N of Eagle Pass) ..... T.D. 602 ft.; S.D.

### McMULLEN COUNTY

Bedwell's No. 1 Brown, Sur. No. 54 ..... T.D. 771 ft.; S.D.
Al Buchanan's No. 1 Hagist, 990 ft. from E and 330 ft. from N lines of N half of NE Sec. 15 ..... Spud.
Cotulla's No. 1 Gordon, 330 ft. from N and W lines of 8¼ of Sec. 127 ..... Drlg. 2,155 ft.
Gleason et al's No. 1 Miles, Chas. Stephens Sur. ..... Location.
Henshaw Bros.' No. 1 Lachusa, 2,800 ft. from N and E lines of Sur. No. 478 ..... Drlg. 2,263 ft.
Lefevre & Spice's No. 2 Hagist, 2,034 ft. due W of the Lefevre & Spice No. 1 Hagist, Sec. 17 ..... R.U.
Loma Oil Co.'s No. 1-A Jacob, start at SW cor. of Sur. No. 7, go S 4,963 ft., thence W 330 ft. in Sur. No. 516 ..... T.D. 875 ft.; W.O.C.
Don Long's No. 1 Nueces Land & Livestock Co., Sec. 111 ..... Location.
W. C. McBride Co.'s No. 1 Hagist, 330 ft. out of the NE cor. of S half of SE Sec. 1 (½ mi. E of Trinity Drillers' No. 1 Hagist dry hole) ..... Location.
C. C. Schumway, Inc.'s No. 5 Shiner, 330 ft. from N and W lines of NE of Sec. 66 of Schumway Subd. of Shiner Ranch ..... Drlg. 1,505 ft.
Texio Oil Co.'s No. 1 Two Rivers Ranch Co., 330 ft. from N line and 330 ft. from E line of Sec. 81 ..... T.D. 1,558 ft.; abd.

### MILAM COUNTY

O. H. Birdwell's No. 1 J. R. Bartek, 150 ft. from N line, 150 ft. from W line of 88-ac. tract in J. A. de Pena Sur. ..... T.D. 1,559 ft.; show of oil est. ½ bbl. per day.

XUM

MEDINA COUNTY

Sanders & Scoggins' No. 1 L. W. Burrell ..... Drlg. lime 739 ft.; no report.

NUECES COUNTY

Diadem Oil Co.'s No. 1 J. C. Mayo, 1,000 ft. along line from SE cor. in NW direction, thence due N 300 ft. (near Robstown), Sec. 23 ..... Drlg. shale 4,200 ft.

Nueo Oil Co.'s No. 1 Synthia Bluntzer, Herrera Sur., 1,240 ft. from S line, 330 ft. from W line of 639.27-ac. tract ..... Drlg. shale 4,755 ft.

Sullivan and Texon Royalty Co.'s No. 1 Simmons & Perry, 330 ft. from S and W lines of NE of square 640-ac. section out of SW cor. of Simmons & Perry tract, 2 miles east of Agua Dulce Field ..... Coring 4,922 ft.

United Prod. Co.'s No. 2 Tolbert, 1,250 ft. from S line and 120 ft. from W line of Blk. 9, Sec. 4, Puenticitas grant ..... Drlg. 4,787 ft.

REAL COUNTY

H. J. Heartwell et al's No. 2 L. J. Haby, 694 ft. from W line and 2,153 ft. from S line of A.B.&M. Sur. No. 175 ..... Drlg. 1,350 ft.; hole full water.

SAN PATRICIO COUNTY

Atkins & O'Neil's No. 1 Welder, 4,695 ft. from E and 317 ft. from S lines of Juan Hart & Sons and John Lucas Sur. (2 miles W of Angelita) ..... T.D. 5,382 ft.; comp. 165 bbls. daily, ¼-in. choke; T.P. 650 lbs., C.P. 970 lbs.

Bunte et al's No. 1 C. C. Smith, start at NE cor. of F. Miller tract, go E 2,338 ft., thence S at right angles 819 ft., A. Armstrong Sur. (3 mi. SW of Odom) ..... R.U.

Carpenter et al's No. 1 Sadler, 300 ft. each way out of SE cor. Blk. 1, Sec. 33, T. Peres Sur. ..... T.D. 603 ft.; W.O.C.

Plymouth Oil Co.'s No. 1 Welder, 4,700 ft. N of Chiltipin Creek, 900 ft. from W line of J. M. and F. Portilla Sur., 1⅛ miles N from Sinton ..... T.D. 6,602 ft.; P.B. 5,200 ft.; cored 5,415-34 ft.; 1 ft. showed oil; setting screen.

STARR COUNTY

Chas. H. Andrews et al's No. 1 A. Guerra, San Jose grant, 330 ft. from N and 150 ft. from E line of Sec. 6 (NE part of county) ..... T.D. 310 ft.; S.D.

B. & B. Oil Co.'s No. 2 Kelsey Bass, 330 ft. from W and S lines of Blk. 12 of Subd. of Porcions 86 and 87, Jurisdiction Camargo ..... Rigged up and S.D.

Cooper & Andrews' No. 1 J. M. Martinez, SW cor. of Sec. 138 ..... Old well, to deepen; T.D. 3,200 ft.

Dean Bros.' No. 1 M. M. Garcia, 2,150 ft. from S line, 4,600 ft. from W line of Sur. No. 916 ..... Drlg. 150 ft.

Goodwin-Yantis' No. 5 Anna K. Bass, 150 ft. from S and E lines of Blk. No. 10, Sur. No. 3, Porcion 87 ..... Gas sand 685 ft.; W.O.C.

Goodwin-Yantis' No. 4-A Kelsey Bass, 1,300 ft. NW of No. 3 in Porcions 86 and 87, Ancient Jurisdiction of Camargo ..... T. D. 625 ft.; S.D.

Great Plains Oil Co.'s No. 1 Sanches, 660 ft. from W line, 330 ft. from S line of SE NW of Sur. No. 344 .. Drlg. 3,815 ft.

McDonald & Campbell's No. 1 C. C. Bowman, 330 ft. from N and W lines of Blk. 13 ..... T.D. 2,150 ft.; S.D.

McDonald's No. 1 E. A. Pfley, 2,600 ft. from S and W lines of Sur. 933 ..... Drlg. 1,745 ft.

Merle Gundy's No. 1 Block, NW of Sur. 167 ..... Moving in material.

Myers, Sullivan & Jenkins' No. 1 Starr County Cattle Co., 330 ft. from N line, 330 ft. from W line, Blk. 62, Porcion 89, Share 60 ..... Cored sand 2,562 ft.; prep. to test. T.D. 2,653 ft.; tested S.W.; to deepen.

Sun Oil Co.'s No. 6-C, V. C. deGuerra et al, 3,300 ft. from NW and 660 ft. from SW lines of Share 1, Saratoga grant, NW Starr County ..... Rigging up.

Sun Oil Co.'s No. 7-B Guerra & Son, 8,035 ft. from SW lines and 3,635 ft. from SE line, Las Cuevitas Sur., NW part of County ..... Drlg. 1,640 ft.

William F. McGinley's No. 1 Starr County Cattle Co., 330 ft. from S. 330 ft. from W line, Blk. 20, Jeffries-Lambeth Subd. of Porcion 89, Ancient Jurisdiction of Camargo ..... Drlg. 2,415 ft.

Weekley et al's No. 1 Starr County Cattle Co., 330 ft. from S and W lines of Blk. 20, Porcion 89 (1 mi. N of Jeffries' No. 1 Lambeth) ..... T.D. 2,050 ft.; S.D.

B. L. Younkins' No. 2 Kelsey Bass, Porcion 86 ..... Bldg. derrick.

UVALDE COUNTY

Evans & Johnson's No. 1 Farris, J Hammons Sur. ..... Drlg. 1,095 ft.; no report.

Humble Oil & Ref. Co.'s No. 1 R. L. Anderson, 7,450 ft. SW of NE line and 9,100 ft. SE of NW line of J. J. Guerra Sur. (3 mi. NE of Uvalde) ..... Drlg. 175 ft.

T. T. Word et al's No. 1 K. S. Truelove, 650 ft. from N line and 3,000 ft. from E line of Daniel Elam Sur. No. 451 (7½ mi. NW of Sabinal) ..... T.D. 420 ft.; abd.

WEBB COUNTY

J. W. Edwards' No. 1 M. Vela, 766 ft. from E and 450 ft. from N line of Blk. 9, Sur. 207 ..... Drlg. shale 1,300 ft.

Shankel et al's No. 1 Saldivar, Sur. 653 of J. V. Borrego grant ..... R.U.

Weekley Oil Corp.'s No. 1 R. Salvidor, 1,269 ft. from E line and 243 ft. from N line of Sec. 657, Borrego grant (SE part of county) ..... Rigged up and S.D.

WILSON COUNTY

A. P. George's No. 1 fee, 160 ft. from SE line and 300 ft. from SW line of 86.32-ac. tract in Canuto Diaz Sur. ..... Drlg. 545 ft.

Pfiel & Vogel's No. 1 Gutzeit, Flores grant, 150 ft. N of road and 150 ft. from W line of farm, 7 mi. NW of Floresville ..... S.D. 809 ft.

WILLIAMSON COUNTY

Atlantic-Pacific Corp.'s No. 1 W. C. Daniel, 500 ft. from SW line, 2,100 ft. from SE line of Washington P. Reese Sur. No. 3 ..... T.D. 642 ft.; rig moved off.

McLean et al's No. 2 R. C. Miller, 300 ft. to S line, 100 ft. to W line of tract, B. Manlove Sur. ..... T.D. 2,300 ft.; cleaning out.

G. L. Rowsey's No. 1-C Jas. Rieger, 725 ft. from N line, 150 ft. from E line of lease in P. Cartwright Sur. ..... T.D. 1,093 ft.; abd.

Taylor Ref. Co.'s No. 4 Brockmeyer, 150 ft. from W line and 1,050 ft. from N line in H. White Sur. .... T.D. 948 ft.; est. 35 bbls. daily; completed.

Taylor Refining Co.'s No. 5-A, Martin Brockmeyer Sur., 4,875 ft. from SE line and 350 ft. from SW line of 172-ac. tract ..... T.D. 930 ft.; comp. 25 bbls. day.

ZAPATA COUNTY

H. V. & W. Oil Co.'s No. 1 Cuellar ..... Drlg. 805 ft.

R. B. Morrison's No. 1 V. and R. Ramirez, 330 ft. from NE line and 330 ft. from SE line of Blk. 4, Share 20, Porcion 19 (5 mi. from Starr County line) ..... T.D. 44 ft.; W.O.C.

Muckelroy's No. 1 Flores, on NE line and 75 ft. from SE line of Lot 2, Blk. 20, Muckelroy Subd. of Porcion No. 37 ..... Derrick.

Joe Palmer's No. 11 S. Vela, 330 ft. from NE and SE lines of Blk. 170, Share 4 of L. Grillo grant, (3 mi. E of Redondo Pool) ..... Moving in.

The Texas Co.'s No. 46 Jennings, 750 ft. N and 12 deg., 30 min. E of No. 44 in Cerrito Blanca grant ..... Drlg. shale 1,119 ft.

Trinity Drillers' No. 1 Manuel Trevino, Sur. 412 ..... T.D. 1,240 ft.; comp. for 50 bbls. per day.

## Southwest Texas Proven Areas

Week Ending May 12

NORTH DALE POOL—BASTROP COUNTY

Watt L. Saunders' No. 1 Harris, 1,100 ft. from SW line, 2,830 ft. from NW line of John Maximilian Sur. No. 22 ..... Top Austin 2,149 ft.; T. D. 2,305 ft. chalk (no report).

CEDAR CREEK POOL—BASTROP COUNTY

Marts & Bevins' No. 3 Orgain, Addison Litton Sur. .... T.D. 1,722 ft.; show oil; top Serpentine 1,640 ft.; comp. 250 bbls. day on pump.

NORTH PETTUS FIELD—BEE COUNTY

United Prod. Co.'s No. 45 Ray, 2,332 ft. SW of No. 13 and parallel with N line of tract, thence SE at right angles from N line of tract, W. J. Porter Sur. ..... 3,573-78 ft. sand, show oil; set csg.

ECKERT POOL—BEXAR COUNTY

Alamo Nat. Gas Co.'s No. 2 Coreth, 300 ft. SE of Humble's No. 2 Coreth in A. Stafford Sur. ..... T.D. 1,055 ft.; set 6⅝-in. csg.; S.D.

J. F. Harrison's No. 4 F. Genubier, 150 ft. from NW line, 400 ft. from NE line of 88-ac. tract in J. Montez Sur. ..... T.D. 831 ft.; S.D.

S. J. Moore's No. 5 T. W. Masterson, 150 ft. from S line, 175 ft. from W line of 41-ac. tract in Miguel Gortaris Sur. ..... T.D. 736 ft.; 6⅝-in. csg.; S.D.

S. J. Moore's No. 4 T. W. Masterson, 150 ft. from S and W lines of tract in M Cartari Sur. ..... T.D. shale 695 ft.; S.D.

VON ORMY POOL—BEXAR COUNTY

Von Ormy Oil Co.'s No. 2 E. B. Carruth, 515 ft. from W line, 1,970 ft. from S line of 160-ac. tract out of 657-ac. tract in F. Rolen Sur. ..... T.D. 720 ft.; S.D.

EAGLE HILL POOL—DUVAL COUNTY

Al Buchanan's No. 5 Duval County Ranch Co., 990 ft. from E line, 330 ft. from S line of N½ of Sur. No. 206 ..... T.D. 101 ft.; abd.

Eagle Hill Oil Co.'s No. 2 J. R. Foster, 330 ft. S of No. 1, Sur. 206 ..... T.D. 2,180 ft.; abd.

Shasta Oil Co.'s No. 3 J. R. Foster, 990 ft. from N line and 165 ft. from W line of 70-ac. tract in Sec. 206.. Moving in rig.

Shasta Oil Co.'s No. 4 J. R. Foster, Sec. 206 ..... Set 10-in. at 42 ft.; drlg. 2,136 ft.

GOVERNMENT WELLS POOL—DUVAL COUNTY

Bridwell Oil Co.'s No. 3 C. W. Hahl, 860 ft. from W line and 330 ft. from S line of Lot 29, or 660 ft. E of No. 1 in Sec. 250 ..... T.D. 2,306 ft.; running liner.

Central Producers' No. 11 Tuck & Johnson, Sec. 42 ..... Set 10-in. at 23 ft.; Cole sand at 1,520-38 ft.; running liner at 2,306 ft.

Central Producers' No. 12 Tuck & Johnson, 330 ft. from N and W lines of SW SW Sec. 42 ..... Drlg. 2,250 ft.

Cox & Hamon's No. 11 State, Sur. 60 ..... T.D. 2,234 ft.; comp. 45 bbls. hr.

J. & C. Drilling Co.'s No. 1 J. W. Kidd, Sur. 56 ..... T.D. 2,222 ft.; abd.

Humble Oil & Ref. Co.'s No. 22 Paul White, 330 ft. from N line and 3,224 ft. from E line of Sec. 249.. Drlg. shale 1,540 ft.

Luse & Cloyes' No. 1 Hagist, 330 ft. from N and W lines of Lot 13, Section 265 ..... Drlg. 740 ft.

Magnolia Pet. Co.'s No. 25 Duval County Ranch, 660 ft. N of No. 16 in Sec. 208 ..... T.D. 2,320 ft.; comp. 75 bbls. oil and 75 bbls. salt water.

Magnolia Pet. Co.'s No. 8-A C. W. Hahl, 330 ft. from N line and 330 ft. from E line of NE of SE Sec. 45, 660 ft. N of No. 6-A ..... T.D. 2,306 ft.; abd.

Magnolia Pet. Co.'s No. 3 Paul Riley, 330 ft. from S line and 330 ft. from W line of SE NW of Sur. 45.. T.D 2,242 ft.; comp. 5 bbls. hr.

Parr Oil Co.'s No. 2 Duval Co. Ranch, 990 ft. from S line and 330 ft. from E line of W½ of SE of Sec. 363 ..... Drlg. 2,101 ft.

Reynosa Oil Co.'s No. 8-B Duval Ranch, 330 ft. from N and W lines of E half of SE Sur. 363 ..... T.D. 2,265 ft.; comp. 10 bbls. per hr., 9/16 in. choke.

Russ et al's No. 6-A C. W. Hahl, 330 ft. S line and 1,650 ft. from W line of N½ of SW of Sec. 46.. ... T.D. 2,328 ft.; comp. 140 bbls. day.

Sun Oil Co.'s No. 33 Weiderkehr, 330 ft. from S line, 990 ft. from E line of Sur. No. 359 ..... Location.

Sun Oil Co.'s No. 49 Weiderkehr, 660 ft. S of No. 48 and 660 ft. W of No. 46, Sur. 359 ..... Location.

Sun Oil Co.'s No. 54 Weiderkehr, 2,970 ft. from N line and 2,310 ft. from W line of Sur. 359 ..... T.D. 2,271 ft.; comp. 2 bbls. hour.

Sun Oil Co.'s No. 55 Weiderkehr, 664 ft. S of No. 31 and 660 ft. W of No. 48 ..... T.D. 2,303 ft.; comp. 48 bbls. per hour, ⅝-in. choke.

Sun Oil Co.'s No. 57 Weiderkehr ..... T.D. 2,290 ft.; testing 7-in. at 2,260 ft.

Sun Oil Co.'s No. 58 Weiderkehr, 660 ft. S of No. 56 and 660 ft. E of No. 50 ..... T.D. 2,284 ft.; comp. 26 bbls. per hour ⅝-in. choke.

Sun Oil Co.'s No. 59 Weiderkehr, 660 ft. S of No. 58 and 660 ft. W of No. 54 ..... Abnd.

Texas Co.'s No. 9 Duvall County Ranch, 990 ft. N and W of SE cor. of Sec. 362, elevation 519 ft. ..... Drlg. 150 ft.

The Texas Co.'s 9-A Duval County Ranch, 330 ft. W of No. 8-A and 330 ft. from N line of lease ..... Coring for Cole sand 1,480 ft.

Texas Co.'s No. 8-A Duval County Ranch, 2,320 ft. W and 330 ft. S of NE of Sec. 206 ..... T.D. 1,501 ft.; preparing to pump.

Trapahooter Reilly's No. 1-B C. W. Hahl, 200 ft. from W line, 330 ft. from S line of Blk. 24, Sur. 250 ... T.D. 2,330 ft.; swabbing.

KINGSVILLE POOL—KLEBERG COUNTY

Ryals & Bartlett's No. 1 Flato, 150 ft. from N line, 30 ft. from W line of NE SE Sec. 40, of Kleberg Town & Improvement Co. Sur. ..... W.O.C., 90 ft.

LUCAS POOL—LIVE OAK COUNTY

Houston Oil Co.'s No. 5 Cartwright, 1,150 ft. SW line and 1,775 ft. SW line of J. M. Colchado Sur. ..... T.D. 5,018 ft.; testing.

JACOB POOL—McMULLEN COUNTY

Jane Oil Co.'s No. 1 Lark, 150 ft. from S and 100 ft from W line of Blk. 13 ..... T.D. 1,048 ft.; testing.

C. R. Kennon's No. 1 Lark, 810 ft. from W line, 150 ft. from N line of 20-ac. tract, Blk. 27, Scrugham Sur. ..... T.D. 952 ft.; S.D.

Loma Oil Co.'s No. 23 Jacob, 660 ft. S of No. 11, 330 ft. from E line of lease, Sur. No. 7 ..... T.D. 1,003 ft.; S.D.

Loma Oil Co.'s No. 25 Jacob, 660 ft. E of No. 24, Sec. 5.. T.D. 1,057 ft.; W.O.C.

CUEVITAS POOL—STARR COUNTY

Sun Oil Co.'s No. 6-B, M. Guerra & Son, 2,310 ft. S of Starr and Jim Hogg County lines and 2,970 ft. W of E line of Los Cuevitas Sur. ..... T.D. 2,055 ft.; D.S. test 2,047-55 ft.; 280 ft. oil in 20 min.; no gas pressure; 1,800 ft. oil in hole. Testing.

Sun Oil Co.'s No. 5-C M. Guerra & Son, 1,320 ft. NE of No. 4-C La Sacatosa grant ..... Location.

AGUA DULCE—NUECES COUNTY

Camp et al's No. 2 King, 990 ft. S of N line, 330 ft. W of E line of Sec. 24, R. Garza Sur. ..... T.D. 5,539 ft.; S.D. for repairs.

Garland Clymore's No. 2-A Ollie Purl, 660 ft. from E line and 660 ft. from S line of Blk. 4, Section 6, Ross Peters Subd. ..... T.D. 4,804 ft.; setting csg.

SAXET FIELD—NUECES COUNTY

South Mineral Oil Co.'s No. 1 J. W. Page, E. Villareal Sur., 471 ft. from E line, 160 ft. from S line of 150-ac. tract ..... T.D. 4,079, 4,073-79, D.S. test 5 bbls. oil, 75 lbs. W.P. through ¼-in. choke 5 min.; sidetracking 2,970 ft. Est. 20 bbls. day.

LOS OLMOS POOL—STARR COUNTY

Los Olmos O. & G. Co.'s No. 57 Kelsey Bass, 150 ft. from N line, 568 ft. from W line of SE SW Sec. 6, Porcions 75, 76 and 77 ..... T.D. 640 ft.; standing; depth corrected.

BYERSVILLE POOL—WILLIAMSON COUNTY

Otto Stolley's No. 1 Charles L. Byer, beginning at SE cor. of P. Cartwright Sur. SW 4,700 ft. along survey line then 950 ft. SE at right angles in F. Stoddard Sur. ..... T.D. 1,022 ft.; S.D.

JENNINGS POOL—ZAPATA COUNTY

O. W. Killam's No. 32 Cuellar, 1,410 ft. from NW line, 4,628 ft. from NE line of 17-ac. tract ..... Drlg. shale 1,932 ft.; D.S. test at 1,925-32 ft. showed salt water.

Texas Co.'s No. 45 Jennings, 750 ft. N. 12 deg. 30 ft. E from Jennings' No. 39, in Cerrito Blanco grant ..... T.D. 1,219 ft.; comp. 30 bbls. oil and est. 10,000,000 ft gas.

# Deeper Drilling Revives Old Producing Wells in Central Kansas Fields; Not Much New Work

By JAMES McINTYRE

A large percentage of the wells completed in the past week in the Kansas fields, for want of a better name, might be called "recompletions." They were old completed wells which were drilled to deeper formations where they found a new supply of crude to add to their lives. Not much new work was started.

Recent tests show a considerable falling off in the potentiality of several of the fields in the State, and it looks as if producers in Kansas will have to spread out their operations and discover new territory if they are to keep Kansas up to the high productive form it has shown in the past 18 months. The State has maintained a high average for many months, with a monthly peak of 131,230 bbls. a day as an average for July last year. It is producing close to 130,000 bbls. now and can do much more, but without an increase of field work the potential production of the State is bound to decline.

### Kansas Production

Estimated daily production of important pools in Kansas for the week ending May 12 and for the preceding week was as follows:

| Pool— | Barrels— Apr. 12 | Apr. 5 |
|---|---|---|
| Hollow | 11,150 | 12,555 |
| Ritz-Canton | 14,500 | 15,245 |
| Voshell | 8,200 | 7,040 |
| Sedgwick County | 7,650 | 7,895 |
| Nikkell | 5,360 | 5,895 |
| Ellsworth County | 3,335 | 2,965 |
| Barton County | 1,237 | 1,405 |
| Rice County | 11,590 | 11,659 |
| Reno County | 4,081 | 4,031 |
| Ellis County | 616 | 106 |
| Kingman County | 2,221 | 1,904 |
| Stafford County | 1,115 | 1,877 |
| Russell County | 6,721 | 6,145 |
| Greenwood County | 12,250 | 12,250 |
| Butler County | 16,900 | 17,000 |
| Other pools | 22,749 | 22,873 |
| Total | 129,675 | 130,845 |

### Sumner County

In Sumner County, Morgan & Flynn have commenced drilling their No. 1 Mercer, NW NE NW Section 36-32-1w, a wildcat. Home Natural Gas Co. and Continental Oil Co. were moving in tools to drill deeper in No. 1 Tamsk, C SE SW Section 14-34-2e, old total depth 3,434 feet.

### Kingman County

Kessler and others were rigged up to start No. 1 Bollinger, SW NW SW Section 12-28-5w, Kingman County, a wildcat.

Skelly Oil Co.'s No. 4 Leisman, SE NE NW Section 29-27-10w, was treated with acid in Lansing lime at 3,423-59 feet and tested 10 bbls. per hour of salt water. Same company's No. 4 Ratcliff, 440 feet from north and east lines of NW Section 30-27-10w, flowed an estimated 160 bbls. a day from Lansing lime at 3,401-76 feet and was then acidized.

Sinclair Prairie Oil Co. was moving in rotary to start No. 1 Shepherd, SE cor. NW Section 22-26-9w, Kingman County.

### Sedgwick County

Sovereign Oil Co. completed No. 1 Creason, 403 feet north and 148 feet west of SE cor. Section 6-26-1e, Sedgwick County.

Sovereign Oil Co. completed No. 1-A Niessen, SW NE SW Section 6-26-1e, Sedgwick County. It was acidized in Kansas City lime at 2,590-94 feet and pumped 83 bbls. of oil and 10 bbls. of water in 24 hours. Same company will deepen No. 1 Creason, 403 feet north and 148 feet east of SW cor. Section 6-26-1e, old total depth 3,375 feet.

Faulkner and others are rigged up on No. 1 Underwood, SW cor. Section 23-25-1w.

### Reno County

Liebernecht has cellar dug for No. 1, farm not named, NW cor. SW Section 1-24-4w, Reno County.

McPherson Drilling Co. completed No. 1 Matlock, NW cor. NE Section 2-24-4w. It flowed 473 bbls. in 24 hours following an acid treatment at 3,334-77 feet.

Study & Frost and others' No. 1 White, SE cor. Section 2-23-4w, flowed 490 bbls. naturally in four hours from Hunton lime at 3,620-39 feet, but will be acidized.

Olson Drilling Co., Shell Petroleum Corp. and Continental Oil Co.'s No. 2 Vogts, C SW NE Section 26-23-4w, deepened from 3,310 to 3,375 feet, pumped 266 bbls. in a 24-hour potential test and was completed.

Sinclair Prairie Oil Co.'s No. 3 Base, C SE SE Section 26-23-4w, flowed 400 bbls. naturally from pay at 3,335-69 feet, but was getting ready to take a potential test.

### Greenwood County

In Greenwood County, C. W. Cross' No. 4 Hoover, C E half NE SE Section 36-24-12, had Bartlesville sand at 1,608-33 feet. It was shot and made a 25-bbl. pumper, completed.

In Woodson County, Theta Oil Co. was rigged up to start No. 5 Estes, C W half SE NW Section 7-24-14, and Sheedy and others were drilling at 750 feet in a wildcat test, No. 1 Street, NW SE NW Section 28-24-14.

Phillips Petroleum Co.'s No. 7 Beal, SE NW NE Section 28-23-11, Greenwood County, swabbed 83 bbls. in four hours from sand at 1,893-1,992 feet, which had been shot with 240 quarts. The crew was cleaning out.

## Wildcat Operations in Kansas

**Week Ending May 12**
**(Descriptions are East unless marked otherwise)**

**BARTON COUNTY**

**Company, farm and location—**
National Ref. Co.'s No. 1 Ingersoll, C NW NE Sec. 2-19-13w ..... Drlg. 845 ft.
**Skelton et al's No. 1 Ott, C SE SE Sec. 16-19-14w ..... P.B. to 3,255 ft.; acidized; pumping wtr.**
Walter Shearen et al's No. 1 Kempler, SE NE NE Sec. 31-18-11w ..... Drlg. 250 ft.

**BUTLER COUNTY**

**DeGenther et al's No. 1 Marnane, NW cor. Sec. 29-26-3.. Cellar.**
L. C. Hay et al's No. 1-A Bolin, SE SW SE Sec. 36-26-6.. K.C. lime 2,159-62 ft.; est. 15 bbls.
Tom Palmer and Darby Pet. Co.'s No. 1 Harder, NW NE Sec. 27-24-3 ..... T.D. 2,967 ft.
**Van Meter et al's No. 1 Moore, NE cor. Sec. 5-25-4 ..... Rig.**

**CLAY COUNTY**

Seevers et al's No. 1 Myers, NE NW NW Sec. 4-10-4 .... Dry and abd. 1,872 ft.
Seidel Bros.' No. 1 Youkers, C S½ SE NW Sec. 21-9-4.. Machine.

**DICKINSON COUNTY**

Dutch Oil Co.'s No. 1 Phillips, C NE NW Sec. 15-15-1e.. T.D. 935 ft.; running 12-in. csg.

**ELLIS COUNTY**

Alma Pet. Co. et al's No. 1 Rhodes estate, SW SW Sec. 14-11-23w ..... Drlg. 3,360 ft.

**ELK COUNTY**

Diller O. & G. Co.'s No. 1-A Keys, C E½ SE NE Sec. 26-31-10 ..... Machine.
Lerke et al's No. 1 Mason, C NE NE Sec. 5-31-10 ..... U.R. csg. 900 ft.
B. Taylor et al's No. 1 Wilson, SE NE SE Sec. 5-28-10 .. Machine.

**ELLSWORTH COUNTY**

**Smith & Ash et al's No. 1 Wilkins, SE cor. Sec. 13-17-10w ..... Acidized 3,260-80 ft.; 205 bbls. 24 hrs.; comp.**

**FINNEY COUNTY**

National Ref. Co. et al's No. 1 Smith, C SE SW Sec. 2-23-29w ..... T.D. 1,800 ft.; S.D. for fuel.

**GREENWOOD COUNTY**

**Ackman et al's No. 1-A Gilroy, SE SW NW Sec. 24-25-12. Drlg. 610 ft.**

**HARPER COUNTY**

Wood Bros.' No. 1 Anthony, C SW SW Sec. 17-31-9w .... Surface pipe set.

**HARVEY COUNTY**

Foraker et al's No. 1 Hiett, SE SW NE Sec. 34-24-4w .... Cellar.
Wenzel et al's No. 1 Schrag, NW SE Sec. 24-22-3w ..... Rig.
Lassen, Bruce et al's No. 1 Joseph, NW NE Sec. 13-24-2 ..... Spudded and S.D.

**KINGMAN COUNTY**

Kessler et al's No. 1 Bollinger, SW NW SW Sec. 12-28-5w ..... Rigging up.

**LYONS COUNTY**

Arkman & Baker's No. 1-A Hind, NE NW Sec. 30-21-12.. Drlg. 400 ft.

**McPHERSON COUNTY**

Tom Palmer's No. 1 Nordling, SE SW Sec. 19-18-2w .... Drlg. 2,395 ft.
**Slick, Pryor & Lockhart's No. 1 Ordineal, SE SW SE Sec. 21-20-3w ..... Coring 3,770 ft.**
Continental Oil Co. et al's No. 1 Graber, NE NW Sec. 32-21-1w ..... Drlg. 2,550 ft.
**Jim Madison's No. 1 Boesker, SE NW Sec. 29-20-1w ..... Spudded.**
Marileen Oil and Goering Bros.' No. 1 Decker, NW cor SE Sec. 20-18-1w ..... Location.

**OSAGE COUNTY**

Jim Edwards' No. 1 Detrich, C NW SE Sec. 21-14-15 .... Machine.

**PHILLIPS COUNTY**

**Ashby et al's No. 1 Close, C SE Sec. 24-5-18w ..... Drlg. 3,285 ft.**

**RENO COUNTY**

Atlantic Oil Prod. Co.'s No. 1 Phillips, C E½ NW NE Sec. 22-22-6w ..... Drlg. 1,582 ft.
L. H. Wentz' No. 1 Metcalf, SE NE SW Sec. 3-24-7w ... Set 15-in. pipe 224 ft.
Sinclair Prairie Oil Co.'s No. 1 Shepard, SE cor. NW Sec. 22-26-9w ..... Moving in.

**RICE COUNTY**

Aylward & Trees' No. 1 Belder, SW SE NE Sec. 27-20-7w ..... Drlg. 1,100 ft.
Continental, Empire and Shell's No. 1 Bennett, NW SE Sec. 25-18-8w ..... Drlg. 1,034 ft.
**Deltrick et al's No. 1 Fitzpatrick, C NE NE Sec. 30-21-8w ..... S.D. 1,505 ft.**
Elwell et al's No. 1 Springer, NE NW Sec. 35-18-10w... S.D. 2,440 ft.
**Geo. Dickey et al's No. 1 Hunter, NE cor. Sec. 35-19-7w.. Dry and abd. 3,765 ft.**
**Langston et al's No. 1 Markle, NE SW Sec. 1-20-9w .... T.D. 1,185 ft.; S.D. for repairs.**
Reserve Dev. Co.'s No. 1 Heinz, NE SW SE Sec. 8-18-10w Drlg. 2,235 ft.

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Frank Young's No. 1 Burris, SE cor. SW Section 20-23-13, pumped 20 bbls. of oil and 60 bbls. of water following an acid treatment in Mississippi lime at 1,662-71 feet. It was completed.

Nye & Kilby's No. 1 Sage, SE cor. Section 36-23-13, had a Mississippi lime pay at 1,752-59 feet and it flowed 2 bbls. per hour and was to be acidized.

### Stafford County

Stanolind Oil & Gas Co. has rig up for a wildcat test in No. 1 Denker, 693 feet from north line and 330 feet from west line, SW Section 10-22-1w, Stafford County.

### Harvey County

Derby Oil Co. and others' No. 1 Hiebert, NE SW SE Section 5-22-3w, Harvey County, had Hunton lime at 3,507-35 feet, total depth, and swabbed 7 bbls. per hour. It will be acidized.

Derby Oil Co.'s No. 1 Schmidt, SE SW NW Section 17-22-3w, deepened from 3,461 feet to 3,485 feet, in Hunton lime and pumped 1,128 bbls. per day and was completed.

Hollow and others' No. 3 Schmidt, SW NE NW Section 17-22-3w, deepened from 3,452 feet to 3,482 feet, in shale, pumped 20 bbls. per hour. No. 4 Schmidt, NW SE NW, Section 17, another old well, was to be deepened from 3,457 feet.

Hollow and others' No. 5 Schmidt, NE SE NW Section 17-22-3w, had Hufton lime at 3,449-85 feet. It swabbed 4 bbls. per hour, but after being acidized swabbed 7 bbls. per hour and was to be treated again.

Study Frost and others completed No. 1 Martens, NE SE SE Section 19-22-3w, an old well deepened from 3,472 feet to 3,534 feet. It pumped 37 bbls. per hour after an acid treatment. It is rated at 888 bbls. in 24 hours.

### McPherson County

Shell Petroleum Corp.'s No. 4 Hoehn, SW NE NE Section 16-21-3w, McPherson County, had Wilcox sand at 3,397-414 feet, total depth. It was shot with 12 quarts and then with 20 quarts and swabbed 172 bbls. in 14 hours. It was being cleaned out.

Roth and Faurot's No. 2 Swanson, SW SE NE Section 13-19-3w, had chat at 2,956 feet; set 6-inch casing at 2,989 feet and drilled to 3,017 feet. The well flowed 60 bbls. of oil and 1 bbl. of water in 1 hour, with gas at the rate of 1,000,000 feet per day.

Rush and others' No. 1 Johnson, C SE NW Section 10-19-2w, deepened from 2,949 feet to pay at 2,977-81 feet, was estimated to be good for 60 bbls. of oil per day and 7,500,000 feet of gas.

Shell Petroleum Corp. has two near completions in Nos. 2 and 3 Finkle. No. 2, NE cor. NW Section 23-19-2w, was acidized in Viola lime at 3,362-71 feet and it swabbed 70 bbls. of oil and 252 bbls. of water in 24 hours. It was retreated. No. 3, NW NE NW Section 23, had Viola lime at 3,369-71 feet, total depth, and swabbed 4 bbls. per hour, 10 per cent water. It had not been acidized.

Wakefield and Shell Petroleum Corp. completed No. 3 Koehn, SE NE NW Section 36-19-2w, an old well deepened from 2,970 feet to Viola lime at 3,395-3,411 feet, total depth. It pumped 72 bbls. in a 24-hour test after an acid treatment.

Gleason and others' No. 1B Hamilton, NW SW SW Section 28-19-1w, was shot with 10 quarts and then acidized in chat at 2,977-3,015 feet, and was estimated good for 300 bbls. of oil and 3,000,000 feet of gas. It was a hole full of water

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# Labor Situation in Seminole Field Improves as Men Return to Work Pending Negotiations

By JAMES McINTYRE

As the new week opened the labor situation in the Seminole area in Oklahoma was very much improved. The Sinclair Prairie lease men, warehouse men and gasoline plant workers who joined in the walkout on May 2 were back to work and the leases and plants were in operation. Employes in other trades had not yet gone back because their unions did not meet until Monday, the day on which this was written.

Dr. George W. Stocking, Federal mediator and member of the Petroleum Labor Policy Board, met on Saturday with J. L. Coulter, secretary and treasurer of the oil field workers union. Neither official could be interviewed, but it was reported in Seminole that an agreement between the Sinclair Prairie company and the men would be reached and the fact that a large percentage of the striking workmen returned on Monday morning made it look as if a permanent peace would be declared.

The 112 employes of the Skelly Oil Co. in the Seminole area who quit their jobs on Sunday, May 6, were back to work late in the week. A restraining order against the strike leaders was granted by the court in Wewoka, county seat of Seminole County, and immediately armed guards were posted around the company's properties.

### Will Drill Deeper

The wildcat test of Springrose Drilling Co. and others, No. 1 Edwards, C SE SE Section 19-11-1e, Oklahoma County, will be drilled deeper. It was originally drilled into Hunton lime at 6,025-69 feet. It made one flow of 198 bbls. on Friday after a several days' shut-in and then made several short flows of 35 bbls. each with some water. This is a very important test and oil men will be glad to see it drilled to the lowest producing formation.

Deaner and others' test in Coal County, C NW NE SE Section 27-2-8, had sand at 4,630-34 feet, but no information could be gained as to whether or not the sand had an oil or gas showing.

Sinclair Prairie Oil Co.'s No. 1, C NE NE SE Section 9-25-6, found Burbank sand at 2,800 feet and drilled in 14 feet. The hole filled with oil in three and one-half hours and made one flow. It was shut in and Oklahoma Pipe Line Co. is laying a line to the well.

Carter Oil Co.'s No. 1, C NW NW SE Section 10-25-6, found Burbank sand at 2,705-97 feet and flowed 1,336 bbls. in 11 hours. It was shut in.

### Asks for Revision of Rules

W. J. Armstrong, state umpire, petitioned the Oklahoma Corporation Commission for a revision of proration rules for the Wilcox sand zone of the Oklahoma City Field. Hearing was set for June 1.

Operators and the umpire's force now are concerned with the increasing underproduction in the zone, and a method of concellation is being sought. Operators will be given an opportunity to make up the oil now due them, Armstrong said, but evidence is that some wells are unable to make their allowable and underage on present operating method.

Underproduction is no longer a problem in the Simpson zone of the field, since the wells now are prorated on a lease basis, with underage being canceled at end of each month.

### Oklahoma Production

Estimated daily average production in the week ending May 12 and the preceding week was as follows:

| Pool— | Barrels Apr. 12 | Barrels Apr. 5 |
|---|---|---|
| Allen | 8,005 | 8,575 |
| Blackwell district | 5,000 | 5,000 |
| Bristow-Slick | 10,250 | 10,250 |
| Cushing-Shamrock | 13,750 | 13,500 |
| Chandler district | 7,250 | 7,500 |
| Davenport | 750 | 750 |
| Healdton | 9,300 | 9,300 |
| Hewitt | 4,550 | 5,000 |
| Burbank | 9,100 | 9,100 |
| South Burbank | 4,150 | 4,650 |
| Balance of Osage | 24,500 | 24,000 |
| Lucien | 10,430 | 10,750 |
| Crescent | 4,215 | 9,795 |
| Marshall-Lovell | 1,050 | 1,050 |
| Bowlegs | 8,215 | 7,995 |
| Carr City | 5,200 | 3,920 |
| Earlsboro | 7,900 | 7,075 |
| East Earlsboro | 11,015 | 9,110 |
| South Earlsboro | 1,040 | 1,130 |
| Little River | 13,190 | 7,585 |
| East Little River | 510 | 645 |
| Seminole | 8,525 | 8,965 |
| East Seminole | 665 | 795 |
| Searight | 2,510 | 2,090 |
| Maud | 1,265 | 1,305 |
| Mission | 4,005 | 3,205 |
| St. Louis-Pearson | 20,150 | 18,460 |
| Cromwell | 4,750 | 4,750 |
| Papoose | 1,400 | 1,400 |
| Oklahoma City | 232,525 | 172,030 |
| Asher-West Asher | 1,850 | 2,000 |
| Tatums | 7,340 | 6,270 |
| Sholem-Alechem | 4,550 | 4,550 |
| Duncan | 4,550 | 4,550 |
| Tonkawa-Garber-Thomas | 6,800 | 6,750 |
| Fish | 2,715 | 3,380 |
| Konawa | 2,225 | 2,310 |
| Gray | 2,660 | 2,830 |
| Graham | 3,550 | 3,550 |
| Holdenville | 3,365 | 3,475 |
| Wewoka | 4,600 | 4,500 |
| Yale-Jennings | 5,150 | 5,100 |
| Other fields | 61,830 | 62,490 |
| Total | 546,350 | 481,375 |

### Osage County

In the South Burbank Pool in Osage County, Carter Oil Co., Bay Oil Co. and Norbla Oil Co.'s No. 3 Oliphant, NE NW SE Section 10-25-6, was completed. It produced 1,336 bbls. in 11 hours from sand at 2,705-95 feet.

Carter Oil Co. and Norbla Oil Co.'s No. 2 Presbury, NW cor. NE Section 10-25-6, produced 3,150 bbls. in 24 hours from sand at 2,677-2,754 feet and was completed.

Same operators completed No. 5 Presbury, SE SW NE Section 10-25-6, in sand at 2,684-2,777 feet. It flowed 1,113 bbls. in 10 hours.

A. H. Kasishkes' No. 3 Carroll, SW cor. Section 15-25-6, was completed. It is a 70-bbl. well at 2,740-60 feet, after a shot. Same operators' No. 4 Carroll was a better completion. It flowed 480 bbls. naturally in 24 hours at 2,755-2,805 feet.

In the Naval Reserve Pool, Lewis Production Co. and Continental Oil Co.'s No. 1-A, NE cor. SW Section 16-24-7, a shallow test, found a pay at 958-61 feet. It flowed 70 bbls. of oil and 50 bbls. of water in 24 hours.

Lewis Production Co. and Continental Oil Co. completed No. 9, SW NW NE Section 16-24-7, a 100-bbl. well after a shot in the Bartlesville sand at 2,632-92 feet.

Continental Oil Co. and Gypsy Oil Co.'s No. 5, SW NW NE Section 21-24-7, was shot with 90 quarts at 2,665-99 feet and flowed 537 bbls. in 17 hours. It was completed, as was No. 6 on the same lease, NW SW NE Section 21, which started at 290 bbls. in 17½ hours from sand at 2,644-2,719 feet, shot with 120 quarts.

Lewis Production Co.'s No. 4, NE cor. SE Section 21-24-7, was given a 10-quart shot at 2,703-13 feet and made 138 bbls. in the next 24 hours. It was not completed.

H. H. Mosher's No. 1, 640 feet south and 1,440 feet west, NE cor. Section 27-28-10, is a 10-bbl. completion at 1,252-96 feet.

E. P. Behler's No. 5, NW SW SE NW Section 1-26-9, was dry and abandoned in Mississippi lime at 1,995-2,022 feet.

A. Beck's No. 1, SW cor. Section 13-24-8, was shot with 160 quarts at 2,172-2,209 feet and flowed 100 bbls. in 1½ hours. It was shut down for tankage.

Indian Territory Illuminating Oil Co.'s No. 1, C SW NW SE Section 5-22-10, was completed. It tested 139 bbls. in 14 hours on the swab, producing from Siliceous lime at 2,425-33 feet.

Drilling restrictions in the Osage Nation have held back the rush of new work in the county. Carter Oil Co. and Empire Oil & Refining Co. were digging cellar for No. 3 Hidgon, NW cor. NE Section 15-25-6; Carter Oil Co. and Norbla Oil Co., digging cellar for No. 7 Presbury, NE cor. Section 10-25-6; Champlin Refining Co., building rig for No. 16 Kennedy, NE SW SE Section 16-24-7; Lewis Production Co., rig on the ground for No. 5, NW NE NW Section 21-24-7, and spudded No. 5, NW SW NE Section 28-24-7. Central Petroleum Co., location for No. 14, C W half E half SW Section 16-22-9; Gray & Tolson, machine in for No. 6, SE SW SW Section 27-21-9.

### Grant County

Argo Oil & Gas Co.'s No. 1 Dickman, SW cor. SE Section 13-24-3w, Grant County, was abandoned at 5,008 feet. It had a hole full of water in Wilcox sand at 4,974-5,008 feet.

### Noble County

In the Lucien Pool, Noble County, Lucien Consolidated's No. 2 Shoenwald, C SW NE Section 20-20-2w, was completed. It flowed 6,785 bbls. in 24 hours from Wilcox sand at 5,088-5,148 feet, and showed a gas production of 6,400,000 feet.

Carter Oil Co.'s No. 1 Tate, C NE NW Section 29-20-2w, was completed. It flowed 4,384 bbls. in 12 hours from Wilcox sand at 4,944-70 feet and at 5,035-5,140 feet.

### Pawnee County

P. Adamson's No. 2 Horton, C SE NE Section 4-20-8, Pawnee County, was abandoned. The hole filled with water from sand at 1,710-20 feet.

### Payne and Creek Counties

McDonald and others' No. 1-A Rentie, NE SW SW Section 31-19-10, Creek County, was abandoned. Cleveland sand at 1,400-25 feet showed only water.

Deep Rock Oil & Refining Co.'s No. 1 Harris, SE cor. NW Section 9-18-5, Payne County, had Wilcox sand at 3,591 feet and was drilling at 3,610 feet with the well showing a 20-bbl. production.

M. S. Hughes' No. 1 Thomas, SE cor. Section 9-19-8, Mannford district, Creek County, was a hole full of water from Bartlesville sand at 2,796-2,910 feet and was abandoned.

Samples & Mann completed No. 1-A Matoy, NW NE SW Section 14-18-8. It was a 6,500,000-foot gasser in Bartlesville sand at 2,748-52 feet.

In the Olive Pool, Creek County, J. E. Crosbie, Inc.'s No. 1 Deer, SE NW NW Section 22-18-8, was shot wtih 110 quarts in the Red Fork sand at 2,660-88 feet and started at 30 bbls. a day. It was completed.

Gled Oil Co. completed No. 8 Escoe,

## Wildcat Operations in Oklahoma

Week Ending May 12

### Northern Oklahoma

**ATOKA COUNTY**

Company, farm and location— Remarks:

Malernee et al's No. 1 Greenville, N. B., NW SW Sec. 35-2s-13e ..... Drlg. 1,650 ft.

**ALFALFA COUNTY**

Acre et al's No. 1 Acre, C SW NE Sec. 14-24-11w ..... T.D. 6,460 ft.; making a small flow of oil once a week.

**BECKHAM COUNTY**

West Oak Gas Co. et al's No. 1 Powell, NW SW Sec. 11-9-26w ..... Drlg. 3,448 ft.; 12,000,000 ft. gas at 3,412 ft.

**CADDO COUNTY**

Denver Prod. & Ref. Co.'s No. 1 Noe, NW SW SW Sec. 34-10-10w ..... T.D. 9,982 ft.; 360 bbls. in 1¼ hrs.

**CLEVELAND COUNTY**

Phillips Pet. Co. et al's No. 1 Baker, C SE NW Sec. 11-9-2w ..... Rigging up.

**COAL COUNTY**

Moore & Deaner's No. 1 Edward, NW NE SE Sec. 27-2-8 ..... Drlg. 4,370 ft.

Emanuel, Rudman & Hatcher's No. 1 Moyer, C SW SE NW Sec. 7-3-8 ..... Drlg. 1,055 ft.

Westheimer & Daube's No. 1 Lowman, C NE SE Sec. 18-2-8 ..... S.D. 4,862 ft.

**COTTON COUNTY**

Ben Russell's No. 1 Zumbuemn, NE cor. SW Sec. 21-4s-12w ..... Moving in.

**CREEK COUNTY**

McBride et al's No. 1-A Wickham, NE NW SE Sec. 3-15-7 ..... Wilcox sand 4,087-4,120 ft.; wtr.; P.B. to 4,066 ft.; drilled to 4,086 ft.; acidized; dry and abd.

**GARFIELD COUNTY**

Argo O. & G. Co.'s No. 1 Dickman, SW cor. SE Sec. 13-24-1w ..... Wtr. 4,974-5,008 ft.; abd.

Ross Cummings et al's No. 1 Gage, SE NW Sec. 27-23-3w ..... Spudded.

**GARVIN COUNTY**

Carter Oil Co. et al's No. 1 Hanner, SW NE NW Sec. 24-5-1w ..... Drlg. 5,870 ft.

Denver P. & R.'s No. 1 Newburn, C SE SW Sec. 22-5-1e ..... Drlg. 2,390 ft.

**HUGHES COUNTY**

Dickison et al's No. 1 Webster, NW NE Sec. 22-10-10 ..... Rig on ground.

J. B. Hill's No. 1-A Perkins, C W½ SW SW Sec. 7-5-9 ..... S.D. 1,030 ft.

Birk-Kan's No. 1 Gardner, NE NW Sec. 21-4-9 ..... Drlg. 3,860 ft. (correction).

Olympic Oil Co.'s No. 1-A McClassen, SE NW NW Sec. 12-9-8 ..... Rig up.

Olympic Oil Co.'s No. 1 McClassen, SE NW NW Sec. 12-9-8 ..... T.D. 600 ft.; lost tools; S.D.

Scruggs et al's No. 1 Black, NE Sec. 13-9-10 ..... Drlg. 3,910 ft.

**KAY COUNTY**

Argo O. & G. Co.'s No. 1 Freese, SW NE NW Sec. 30-26-1w ..... Drlg. 4,253 ft.

(Continued on Next Page)

# ELECTRIC POWER

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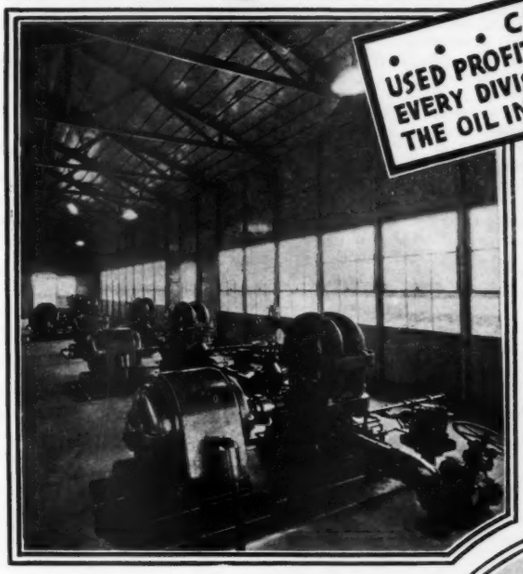

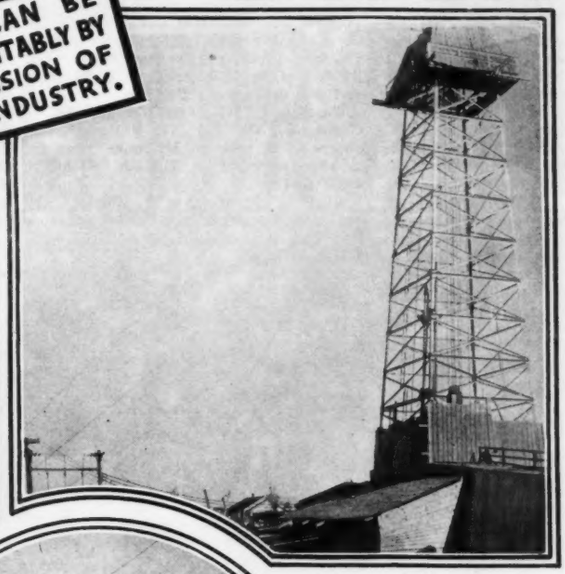

PIPE LINE pumping stations equipped to use electric power require an investment of only about 1/3 to 1/4 of that of other forms of power.

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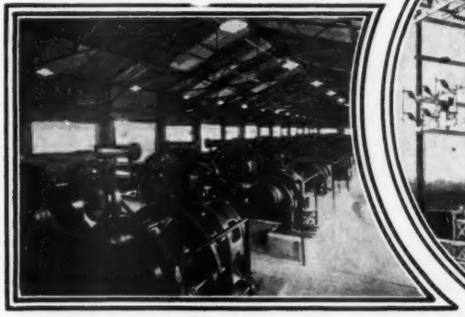

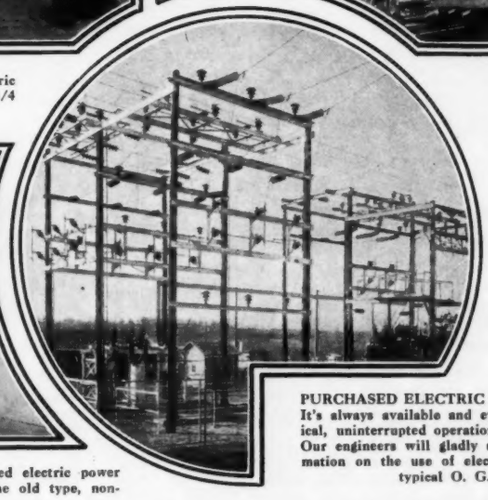

PUMPING PLANTS for lifting oil, using purchased electric power can be equipped for much less than those using the old type, non-electric lifting equipment.

PURCHASED ELECTRIC POWER lowers operating costs. It's always available and ever dependable. Enjoy economical, uninterrupted operation over a longer period of time. Our engineers will gladly supply you with complete information on the use of electric power. In the circle is a typical O. G. & E. substation.

REFINERIES find purchased electric power is more economical, too. Here is a view of one of the many refineries which Oklahoma Gas And Electric Company serves.

## OKLAHOMA GAS AND ELECTRIC COMPANY

**Commercial Department**

**OKLAHOMA CITY** **OKLAHOMA**

NE NE SW SE Section 27-18-8. It was shot in sand at 1,300-30 feet and made 60 bbls. in 24 hours.

L. B. Jackson's No. 2 Brown, SE NW SE Section 27-18-8, is a 55-bbl. completion in Layton sand at 1,312-42 feet, shot with 160 quarts.

Ed Smith and others' No. 4 Tucker, CSL SW SW Section 14-17-8, is a 10-bbl. completion in Peru sand at 2,278-2,300 feet, shot with 30 quarts.

A. A. Bailey's No. 1 Harjo, NE NW NE Section 12-16-9, had a hole full of water from Wilcox sand at 3,292-3,336 feet and was abandoned.

Carter Oil Co.'s No. 8 Durant, SW SE NE NE Section 18-16-9, an old well deepened from 3,023 feet to Wilcox sand at 3,522-51 feet. The hole filled with water and will be plugged back to test the Bartlesville sand.

McBride and others' wildcat test, No. 1-A Wickham, NE NW SE Section 3-15-7, was abandoned. It was acidized in dolomite at 4,066-85 feet without results. It had been drilled to Wilcox sand at 4,087-20 feet and found only water.

Devonian Oil Co.'s No. 6 Big Pond, NW cor. NE Section 36-15-7, south of the old Cushing-Shamrock Field, was completed in Wilcox sand at 3,753-82 feet. It is an 80-bbl. pumper.

New work started in Creek County included L. B. Jackson's No. 1-A Hawkins, NW NE SW Section 10-18-8, rigged up; Bert Swift's No. 1 Martin, CNL NW NE Section 18-18-10, rig on the ground. Fleetwood and others' No. 1 Riverbed, 200 feet from the north line and 570 feet from west line, NE Section 1-18-12, rigged up; Alma Oil Co.'s No. 2 Island, NW SW NW Section 7-17-8, spudded; Carpenter and others' No. 1 Tiger, SW NW SW Section 27-17-11, rigged up; Freeland & Wright's No. 1, SE SW SW Section 15-16-9, rigged up; Devonian Oil Co.'s No. 1 Smith, NE cor. NW Section 36-15-7, rig.

### Tulsa and Wagoner Counties

Pearson and others' No. 2 Brown, C SW SE Section 14-18-14, Tulsa County, was dry and abandoned at 1,385 feet.

D. Morgan's No. 4 Johnson, SW NW SE Section 35-18-14, was a 10-bbl. completion in Burgess sand at 1,385-91 feet.

J. E. Martin's No. 4 Drew, CWL SW NE Section 26-18-15, Wagoner County, had dry sandy lime at 1,725-30 feet and drilled to 1,750 feet and abandoned the hole.

Thompson and others abandoned No. 1 Berryhill, SW SE SE Section 26-18-15, at 1,708 feet.

The Bixby area scored a comeback when F. D. Misener's No. 4 Hodge, CSL NE NW Section 8-17-14, was deepened from 1,488 feet to 1,501 feet and the well started at 100 bbls. a day. Rachael Oil Co.'s No. 2 Kernal, CNL SE NW Section 8-17-14, is a 1,000,000-foot gasser at 1,495-1,526 feet, and was completed.

McIntire and others' No. 6 Tiger, SE NE NW Section 2-17-15, Coweta district, is a 40-bbl. completion from sand at 1,074-98 feet, shot with 40 quarts. Cahill and others' No. 4 Tiger, CEL SE NW Section 2-17-15, was good for 10 bbls. after a shot at 1,058-72 feet. It was completed at 1,092 feet.

J. Seacrest's No. 2 Taylor, SE NE NW Section 5-17-16, Wagoner County, was dry and abandoned at 885 feet.

M. Vandeventer's No. 1 Staley, NE SW NW Section 34-16-13, Leonard district, Tulsa County, made a 750,000-foot gas well at 615-65 feet and was shut in.

Crews & Armstrong completed No. 3 Squire, C NW SE Section 8-16-14. It flowed 250 bbls. from Glenn sand at 1,517-31 feet.

### Okmulgee County

Dodson and others had machine in for No. 1-A McKinney, NW cor. NE Section 16-15-14, Okmulgee County, and J. Summers and others were rigged up on No. 5, CSL N half NW NW Section 16-15-14.

Gled Oil Co. had a hole full of water in No. 18 Doyle, SW cor. NW Section 28-13-14, from Wilcox sand at 2,563-68 feet.

Cusack & Sharon's No. 8 Wiley, SE NW NW Section 29-13-14, was deepened from a shallow sand to the Wilcox at 2,550-68 feet and the hole filled with water. It was abandoned.

### Okfuskee County

Wells and others had a machine in to start No. 3 Stephenson, NW cor. SE Section 14-10-11, Okfuskee County.

### Greater Seminole District

Scruggs and others' wildcat in Hughes County, No. 1 Black, NE cor. Section 13-9-10, had Woodford shale at 3,645 feet, Hunton lime at 3,650 feet, and with a show of oil, gas and water; Sylvan at 3,765 feet, Viola at 3,873 feet, Simpson at 3,879 feet, and dolomite at 3,895 feet, and was drilling at 3,910 feet.

Turman Oil Co. and Phillips' No. 1 Carpenter, SW SE NE Section 4-8-5, pumped 127 bbls. in 18 hours after an acid re-treatment in Hunton at 3,993-4,005 feet.

Ligon & Todd's No. 1 Wilson, NE cor. NW Section 30-8-8, Wewoka Townsite, had Wilcox sand at 4,035-47 feet. The hole filled with oil and water.

Elbar Oil Co.'s No. 2 Wyatt, SW NW NW Section 10-7-4, was acidized in Hunton at 3,660-3,750 feet and flowed 380 bbls. in 19 hours.

Prince Drilling Co.'s No. 1 Brandenburg, NE SW NW Section 21-7-4, was acidized at 3,667-80 feet with no results and was drilled to 3,841 feet where it swabbed 75 bbls. of oil in 12 hours.

Mid-Continent Petroleum Corp.'s No. 2 Upton, NE cor. Section 1-6-4, Asher area, swabbed 140 bbls. in eight hours after an acid treatment; total depth was 4,155 feet.

Vivian Oil Co.'s No. 1 Atchley, NE NW NE Section 1-6-4, had dolomite at 4,180 feet. At 4,194 feet the hole filled 400 feet with oil. It was acidized and the hole filled 300 feet with oil. It was drilled to 4,215 feet and the crew was testing.

In the Sasakwa Townsite Pool, Stanolind, Amerada, and Indian Territory Illuminating Oil Co.'s No. 2 Palmer, SW NW NW, had Wilcox sand at 4,056-59 feet, and flowed 2,847 bbls. the first day and 2,634 bbls. the second day.

New work started in the Greater Seminole area includes Atlantic Oil Producing Co.'s No. 1 Pickens-Clary, C SW NE Section 12-9-4, Pottawatomie County, a location; Carter Oil Co. and others' No. 1 Hodges C-2, NE SW SE Section 16-9-6, a location; Magnolia Petroleum Co.'s No. 1 Williams, SE SW NW Section 18-8-7, a location; Phillips Petroleum Co.'s No. 3 Booze, SE NE SE Section 9-7-4, cellar; Smithpoe Oil Co.'s No. 1 Phillips, NW SW NE Section 10-7-4, rig.

The strike instituted by Sinclair Prairie employes on May 2 influenced the field work of the entire district to some extent and this may account in part for the small number of new operations in the field the past week.

### Logan County

Anderson & Kerr's No. 1-A Hull, 455 feet from the north line and 330 feet from the E line SE Section 11-18-4w, Logan County, was completed. It started at 355 bbls. a day from Layton sand at 4,775-86 feet and was then drilled deeper to 4,820 feet with no better results.

### Oklahoma County

The Stanolind Pipe Line Co. has connected with Mid-Kansas Oil & Gas Co.'s No. 1, SW cor. Section 32-14-3w, Oklahoma County. The well produced 489 bbls. in 24 hours from Wilcox sand at 6,697-6,771 feet. The company has started drilling a west offset, No. 1 Dahl, SE cor. Section 31-14-3w.

In the Oklahoma City Field, Wofford Drilling Co. and Skelly Oil Co.'s No. 2 Military Addition, 1,230 feet south and 190 feet west of C Section 34-12-3w, produced 600 bbls. in 12 hours on the gas lift and was then shut in. Sand is at 6,385-6,445 feet.

Ray Stephens' No. 1 Rucker, 438 feet south and 265 feet east of NW cor. Section 2-11-3w, was shot with 60 quarts in sand at 6,305-65 feet, and flowed 284 bbls. in two hours with gas at the rate of 12,000,000 feet per day. It was shut in.

Anderson & Kerr's No. 1 M.K.&T., 113 feet from the north line and 872 feet from the east line of NW Section 3-11-3w, swabbed 331 bbls. in 15 hours after a shot of 80 quarts at 6,395-6,435 feet. The crew was cleaning out.

Denver Producing & Refining Co.'s No. 1 Washington, 450 feet south and 690 feet east of NW cor. Section 3-11-3w, plugged back to 6,436 feet and produced 562 bbls. in 24 hours on the gas lift. Later it produced 557 bbls. of oil and about 250 bbls. of salt water. It was shut in.

Trans Mississippi Oil Corp. completed No. 1 Miller, 360 feet south and 673 feet east of C Section 15-11-3w. It flowed 1,144 bbls. of oil in 3 hours and 23 minutes with gas at the rate of 13,400,000 feet per day. Wilcox sand lies at 6,410-6,525 feet.

Larkin & Warr's No. 1 Beaucamp, 600 feet from the south line and 175 feet from the west line of SE Section 22-11-3w, had Wilcox sand at 6,505-86 feet. It was shot twice with 60 quarts each and once with 250 quarts. The crew was fishing for tools.

Indian Territory Illuminating Oil Co.'s No. 4 Wisel, C NW SE SE Section 26-11-3w, was completed. On its potential test it made 624 bbls. in four hours from Wilcox sand at 6,460-6,567 feet. Same company's No. 7 Little, C SW NE NE Section 27-11-3w, was shot with 136 quarts and later acidized. It swabbed 62 bbls. in five hours and later swabbed 99 bbls. in 12 hours. The crew was installing a plunger lift.

Springrose Drilling Co. and others' No. 1 Edwards, C SE SE Section 19-11-1e, in the Newalla district, has not been completed but is flowing 35 bbls. daily. It has not been drilled any deeper. It is in the top of the Hunton lime at 6,025 feet.

The only new operation in Oklahoma County during the week was Larkin & Warr's No. 1 Farris Rodesney, 650 feet south and 970 feet W of C Section 22-11-3w, a rig.

### Pontotoc County

Harris & Hayes' No. 1-A Cravens, SE cor. SW Section 24-5-5, Pontotoc County, was acidized twice and shot with 20

(Continued on Page 154)

## Wildcat Operations in Oklahoma

(Continued from Preceding Page)

KINGFISHER COUNTY

Jadeka Dev. Co.'s No. 1 Frakes, C SW NE SW Sec. 16-15-6w ..... Drlg. 2,814 ft.

LATIMER COUNTY

Choctaw Oil & Gas Co.'s No. 1 Fleming (gas test), NE SE SE Sec. 9-6-22 ..... Comp. 500,000 ft. gas at 1,465-1,727 ft.

LEFLORE COUNTY

East Okla. Oil & Gas Co.'s No. 1 Metcalf, SW cor. Sec. 2-4-26 ..... Drlg. 1,230 ft.

LINCOLN COUNTY

Anderson & Kerr's No. 1 Huckabee, SW cor. Sec. 9-15-2.. T.D. 5,365 ft.
Harvey Newman Oil Co.'s No. 1 Rueb, C NW NE Sec. 23-15-5 ..... Cellar
Mid-Continent Oil Co.'s No. 1 Bolby, NE SE Sec. 27-12-2 ..... Rig on ground.
H. W. Pierce's No. 1 McMurtry, NE cor. Sec. 6-14-5 .... Drlg. 4,310 ft.
The Texas Co.'s No. 1 Gessmann, SE NE Sec. 33-14-4 .... Drlg. 170 ft.

LOGAN COUNTY

Anderson & Kerr's No. 1-A Hull, 455 ft S, 330 ft. W of E cor. Sec. 11-18-4w ..... Sand 4,775-4,812 ft.; flowed 287 bbls. in 24 hrs.; comp.
W. N. Anthony's No. 1 Fruin, SE SW Sec. 4-16-1 ..... Tools in.

NOBLE COUNTY

Continental Oil Co. et al's No. 1 Bennett, SE NW Sec. 19-20-1w ..... Drlg. 2,830 ft.
Texas Co. et al's No. 1 Voss, C NE SE Sec. 28-22-2w.... Drlg. 2,369 ft.

OKLAHOMA COUNTY

Gypsy Oil Co. et al's No. 1 Harris, C SW NE Sec. 27-13-4w ..... Drlg. 4,160 ft.
Springrose Drlg. Co.'s No. 1 Edwards, C SE Sec. 19-11-1 ..... T.D. 6,079 ft.; flows 35 bbls. dly.

OSAGE COUNTY

Norbla Oil & Gas Co.'s No. 1, NW SE Sec. 21-24-7 ..... Cellar.
Peters Pet. Co. and Norbla Oil Co.'s No. 1, SW cor. Sec. 15-25-5 ..... Drlg. 865 ft.
Empire O. & R. Co.'s No. 1, SE NE Sec. 3-25-3 ..... T.D. 2,070 ft.; U.R. 10-in. csg.

PAWNEE COUNTY

Geo. Thomas' No. 1 School Land, SW cor. Sec. 13-20-5.. Set 8-in. csg. 1,805 ft.

PITTSBURG COUNTY

Arkhoma's No. 1 Cummings, NW NE SE Sec. 6-4-12... Fishing 515 ft.
Exchange Drlg. Co.'s No. 1 Chunn, SE NW Sec. 29-4-14.. Rotary tools in.
W. E. Hailey's No. 1 Drew, NW SW Sec. 21-3-14 ..... S.D. 190 ft.
Mid-Western Oil & Gas Co.'s No. 1 Shelton, CSL SE NW Sec. 7-7-18 ..... Drlg. 2,306 ft.
Moffett & Hall's No. 1 Jones, C NE NW Sec. 14-8-14 .... Lost tools; T.D. 3,200 ft.; S.D.
C. L. Carlock's No. 1 Chunn, SE NW Sec. 29-4-14 ..... Rigging up.

PONTOTOC COUNTY

E. M. Blanchard's No. 1 Crabtree, NE SE NE Sec. 27-2-6.. S.D. 2,920 ft.
Boyle et al's No. 1 Newbern, SW NE Sec. 31-5-4 ..... Drlg. 575 ft.
Dandridge et al's No. 1 Stafford, NW cor. Sec. 5-1-6e.. Drlg. 560 ft.
Riddle et al's No. 1 Barnes, SE NW SE Sec. 21-5-4 ..... Rigging up.

POTTAWATOMIE COUNTY

Texas Pacific's No. 1 Franklin, SW NW SW Sec. 10-9-4. Hunton lime 4,437-49 ft.; dry and abd.
W. E. Witt et al's No. 1 Atwater-Fundis, NE NW NE Sec. 33-8-3 ..... Cellar.

SEMINOLE COUNTY

Harman Oil Co.'s No. 1 Bowlegs, SE NE SW Sec. 1-7-7 ..... T.D. 1,655 ft.; U.R. 5-in. csg.
Flemlee et al's No. 1 Bowlegs, SE NE SW Sec. 1-7-7.... S.D. 1,260 ft.
Tate & Starbuck's No. 1 Heard, SE NW Sec. 9-6-7..... Spudded.

### Southern Oklahoma

ATOKA COUNTY

J. D. Boukan's No. 1 Howard, NW SW NW Sec. 20-2s-10e. Drlg. 1,135 ft.
Brookshire et al's No. 1 Rowland, NW NE NE Sec. 18-3s-10e ..... S.O. 3,487-99 ft.

CARTER COUNTY

Texas Co.'s No. 1 Sullivan, NE SE Sec. 5-5s-1w..... Rig.

COMANCHE COUNTY

Heiden & Taylor's No. 1 Crotcher, SW NE Sec. 11-1n-12w. OW.D.D.; set 6-in. csg. 1,135 ft
Miller & Goodnight Drlg. Co.'s No. 1 Welderman, NW SE SE NW Sec. 34-2n-12w ..... Drlg. 210 ft.
F. F. Stevens' No. 1 Green, SE SW Sec. 11-1n-13w..... Drlg. 769 ft. (correction).
Stores et al's No. 1-A Crutcher, C NE Sec. 11-1n-12w.. Drlg. 410 ft.
Smith et al's No. 1 McClung, NE SW NE Sec. 29-4n-12w Abd. 260 ft.
Snodgrass' No. 1 Willett, NE cor. NW Sec. 33-4n-12w.. Abd. 515 ft.

GARVIN COUNTY

National Prod. Co.'s No. 1 Littrell, NE cor. Sec. 31-2n-3w. S.D. 299 ft.

MARSHALL COUNTY

Paul Robb's No. 1 Vittetoe, C NE SE Sec. 11-5s-4e..... T.D. 4,750 ft.; fishing.

MURRAY COUNTY

Gilcrease Oil Co.'s No. 1 Brown, SW cor. Sec. 26-1n-2e .Drlg. 1,191 ft.
T. E. Revell et al's No. 1 Wolfe, NE cor. Sec. 18-1-2.... Drlg. 2,230 ft.

PUSHMATAHA COUNTY

J. V. Scrivener et al's No. 1 Swink, C NE SE Sec. 29-6s-20e ..... Setting csg. 410 ft.
Whitehead et al's No. 1 Messer, SE SW SW Sec. 35-3s-16e. T.D. 2,405 ft.; S.D.

STEPHENS COUNTY

J. W. Madison's No. 1 Tussey, SW SE NW Sec. 24-1n-4w.. S.D. 3,210 ft
Geo. Pace et al's No. 1 Siever, SE SW Sec. 4-1n-7w ..... Drlg. 2,890 ft.

TILLMAN COUNTY

J. H. Everett's No. 1 Crane, SW cor. Sec. 15-3s-14w .....Rig.

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# Acadia Parish Discovery the Center of Interest; Area Being Called "Conroe of Louisiana"

By A. C. EASTERWOOD
Gulf Coast Bureau, The Oil and Gas Journal

HOUSTON, Tex., May 14.—The area around the Bosco producer, new discovery in the easternmost limits of Acadia Parish, Louisiana, continued to hold the interest throughout the Gulf Coast during the past week. With nine new locations scheduled to start drilling within the next few days and royalty soaring from $300 to $700 and $1,000 per acre within a week, the area has attracted considerable interest.

Superior Oil Co. of California's No. 1 P. O. Hermandes, about 4 miles north of Duson, proved the Bosco geophysical prospect productive two weeks ago when the well came in flowing at the rate of 31½ bbls. oil per hour through twelve-sixty-fourths inch choke with 1,360 pounds pressure. This rank wildcat, now flowing around 750 to 800 bbls. daily, has opened what is believed to be one of the largest producing areas uncovered in the Gulf Coast for some time and is already referred to by some as the "Conroe of Louisiana." It is the general belief the field will prove productive over a large acreage and will encompass parts of Acadia, Lafayette and St. Landry Parishes. However, the very active wildcat drilling campaign scheduled to start immediately, will help to prove up the area within a very short time.

The well was drilled to a total depth of 8,916 feet in sand and set a string of 7-inch casing at 8,830 feet. Plugs were never drilled and a very unusual completion program followed. Operators decided to test the above sands before drilling plugs. It made eight perforations from 7,845-50 feet and before bringing in the well, two drill stem tests were made and each showed 20 bbls. of oil with wash water and mud in 20 minutes, or an average flow at the rate of 60 bbls. per hour.

It topped the Discorbis at 7,629 feet, encountered Heterostegina at 7,940 feet and had top of the Marginulina at 8,360 feet. Surface elevation is 53 feet. Four miles of pipe line was being laid from Duson to the well, where operators have about 5,500 bbls. of storage. The well is near the center of a 6,500-acre block leased by Pure Oil Co. about nine years ago.

### To Start Six Tests

Due to the expiration date of some of the leases Superior Oil Co. is moving in material and building foundations for six tests to start within the next few days, all of which will be within a radius of about a mile of the producer. Four of the new tests will be drilled in Acadia Parish and two in St. Landry Parish. Humble Oil & Refining Co. has staked location for No. 1 Joseph Berb on a 100-acre tract in Section 21, about 1½ miles north and slightly west of the discovery while Shell Petroleum Corp. made location for No. 1 E. M. Eliabautrout in Section 22, about 1½ miles due north of the producer. Magnolia Petroleum Co. had also made a location in the area and it has been reported Standard of Kansas will probably drill a well on its 45-acre tract about 2,000 feet south of the discovery.

Royalty trading has been changing hands at a fast pace during the week with prices soaring higher every day as the royalty gets more scarce. Within a radius of about 1½ miles around the well royalty that was bringing about $300 per acre is now selling for $700 to $750 per acre and some asking as high as $1,000 per acre. Pure Oil Co. is reported taking all available royalty within a radius of 2 miles around the well.

About 10 miles west of Superior's new producer and in Township 8s-1e, Humble Oil & Refining Co. has just finished taking a big block. Pure Oil Co. is reported taking all available acreage to the north and between Humble's block and Woodley Petroleum Co.'s No. 1 Daigle in the C NE SE Section 24-7s-1e, which has just completed derrick.

### Jackson County

About a mile from the town of Vanderbilt in Jackson County, Encio Gas Co.'s No. 1 Toney, a rank wildcat in the Raymond Musquiz Survey, proved the existence of another new oil field in the Gulf Coast during the past week when it came in flowing 22 bbls. of 33 gravity oil per hour through three-sixteenths inch choke. The well made 500 bbls. the first day and has since been flowing around 560 bbls. daily. It had an equalized pressure of 800 pounds. It had sand with streaks of shale from 5,575-82 feet. The well topped the Discorbis at 4,635 feet, had top of the Heterostegina at 4,964 feet, and encountered top of Marginulina at 5,100 feet. Surface elevation is 20 feet. Total depth is said to be in the Frio. Humble Pipe Line Co. has a 3-inch line from the well to an eight-car loading rack at Vanderbilt and oil is already being shipped out. The well is about 3½ miles west of the old dry hole of Texas Co.'s No. 1 Mitchell, abandoned at 6,233 feet. It topped the Discorbis at 4,941 feet actual or 4,896 feet subsea.

Royalty around the well is said to be changing hands at around $500 per acre while leases are bringing around $2,000 cash and $2,000 out of oil. It is reported some leases have sold as high as $5,000 per acre. However, leases of this type demanded only a small cash payment and the remainder out of oil. Humble Oil & Refining Co. is reported to have taken over 1,000 acres of the Encio block. Sun Oil Co. and Herman Heep are also reported to have taken acreage in the area.

Atkins & O'Neil's No. 1 Ward, in Block 8, I.&G.N. Survey No. 18, was reaming at 6,480 feet after encountering water sand at 6,567 feet. It showed 32 thribbles of salt water with 2 thribbles of sand and mud through three-eighths inch choke in eight minutes on a drill stem test from 5,944-57 feet.

### Victoria County

In Victoria County and along the same trend as the Jackson County new discovery and the Greta Field in Refugio County, C. & R. G. Drilling Co.'s No. 1 R. C. Roos, in the M. A. Castanon Survey, and north of the Keeran Field, was drilling at 3,850 feet. It had a gas sand from 2,975-85 feet and is said to be running high. Surface elevation is 60 feet.

### Galveston County

In Galveston County, just south of the Dickinson Bayou, Humble Oil & Refining Co. has staked location for No. 1 Maco Stewart in the center of east and west lines of 400-acre tract in the John Sellers Survey. About 3 miles south, George K. Spoor's No. 1 Maco Stewart in the W. K. Wilson Survey, had set surface casing and was waiting on cement at 570 feet. The area around these wells has been the center of a nice lease play in recent weeks and both wells will be watched with much interest.

The lease play in northwestern Galveston County and along the Galveston and Brazoria County lines is still in progress and has showed no signs of abating. Several leases were taken during the week in the Sarah McKissick Survey. Among the more recent to acquire acreage in the area were Frost, O. H. Sheppard, W. E. Everett, S. J. Sloane, W. R. Thomas and G. C. Hamill.

### Splendora Area

In the Splendora area of eastern Montgomery County, Steen Drilling Co.'s No. 1 Texas Long Leaf was drilling at 4,400 feet in shale in the new hole. The well was plugged back to 2,300 feet after accidentally sidetracking hole while running casing. The well was formerly carried to a total depth of 6,053 feet, where it tested salt water. Humble Oil & Refining Co. was rigging up for No. 1 Texas Long Leaf Lumber Co. The location is a little more than a mile north and slightly east of Steen's well and 466 feet out of the southeast corner of Humble's north 2,000-acre tract in the Walker County School Land Survey. This will be one of the most watched wildcats on the Gulf Coast.

### West of Conroe

McElroy Oil Corp.'s No. 1 Grogan Cochran Lumber Co., west of Conroe and north of Goodwin, was drilling at 4,600 feet in shale. It topped the Hockley at 3,790 feet actual or 3,607 feet subsea. Baker and others' No. 1 Benker, about 3 miles west of Conroe and in the D. James Survey, was preparing to make a drill stem test in sand from 4,645-67 feet. Total depth was 4,670 feet. Martin and associates of Houston are reported working up a block centering around the F. H. Truett, J. Moore, J. Saddler and H. Hostetter Surveys. They are also reported to have taken a large block of the Delta Land & Timber Co. acreage.

### Cleveland Area

In the Cleveland area of Liberty County, Gulf Production Co.'s No. 3-C Kirby, southwest of the discovery well, was nearing the critical depth and drilling at 5,748 feet in hard shale and lime. It topped the Camerina at 5,723 feet actual or 5,600 feet subsea. Top of the Hockley was encountered at 4,870 feet. Gulf's No. 2-C Kirby was drilling ahead below 8,683 feet in hard shale with no shows yet encountered. At this depth it was 1,679 feet below top of the Crockett member of the Cook Mountain.

H. Sample's No. 1 Security Trust Co. in the J. Faulk Survey, was drilling cement plug at 1,120 feet. The 10-inch surface casing was set at 1,102 feet. Humble Oil & Refining Co. is reported to have an interest in 500 acres on which the well is now drilling and also an addi-

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tional 1,000 acres in the area. Companies that have protection around the well include United Gas, Showers and Moncrief, Charles Hooks, D. D. Bruton, Devonian, Skelly, Brown & Wheeler and Magnolia. Sun Oil Co. is reported to have taken several tracts around the edge.

### Waller County Wildcat

Probably the most important wildcat test drilling in the Gulf Coast at present is Stanolind and Amerada's No. 1 M. Manor heirs, in southeastern Waller County. Late in the week it was drilling at 3,790 feet in sand and shells. It topped the Catahoula at 2,111 feet, had top of the Amphistigina at 2,766 feet, and encountered the second ash (Frio) at 2,824 feet actual or 2,637 feet subsea. De Armand's No. 1 Vaughn in the southwest part of the county, was waiting on cement at 505 feet after setting surface casing.

### Harris County

South of the Bammel area in western Harris County, American Liberty Oil Co.'s No. 1 Clappert was preparing to perforate casing after plugging back to 6,400 feet. The well was formerly drilled to a total depth of 6,639 feet in shale. On a drill stem test at 6,625 feet, open 27 minutes through one-quarter inch choke, it showed 12 thribbles of mud with 9 thribbles of salt water.

East of Fauna and in the Patching Survey there is reported to be quite a bit of leasing going on. Continental Oil Co., Texas Co. and Sun Oil Co. are reported acquiring acreage in the area. Texas Co. is reported to have an option on a large block on the Harris and Fort Bend County lines and is to select not less than 6,000 acres, after which a well is to be drilled within 90 days. In the eastern part of the county and north of Sheldon, Sun is reported to have taken a tract in the John Dunman Survey.

### Hardin County

Parr and others' No. 1 Bernard, on the east edge of the old Sour Lake Field in Hardin County, has set screen and late in the week was preparing to wash in. Total depth is 7,061 feet. The well came in about four weeks ago for estimated 1,000 bbls. daily in sand from 6,936-53 feet, but killed it to set screen and was never able to bring it in again.

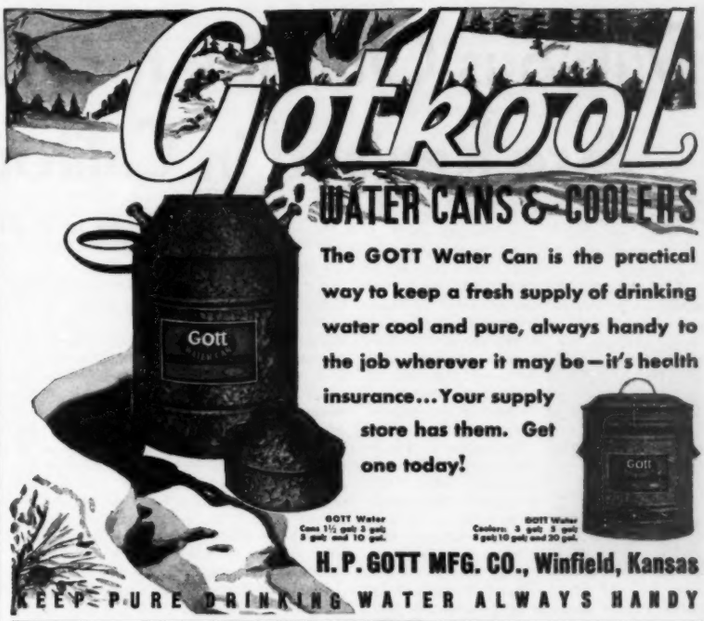
(Continued on Page 141)

## Gulf Coast Fields and Wildcats

**Week Ending May 12**

| Company, farm and location— | Remarks: |
|---|---|
| **RACCOON BEND—AUSTIN COUNTY** | |
| Humble O. & R. Co.'s No. 4-B Rufus Hardy, 2,086 ft. from S line and 430 ft. from W line of Sec. 49, J. Groce grant | T.D. 3,420 ft.; preparing to make D.S. test. |
| Humble O. & R. Co.'s No. 5 L. B. Sherwood, W. C. White Sur., Abst. 101 | Drlg. sandy shale 3,053 ft. |
| **MANVEL—BRAZORIA COUNTY** | |
| Burton Drlg. Co.'s No. 1 Parker, 40 ft. E and 70 ft. S of SW cor. of Lot No. 28, E.T.&B. Sur. No. 68 | T.D. 5,338 ft.; abnd. |
| Shell Pet. Corp.'s No. 2 Gubert, 268 ft. from N and 325 ft. from E line of Lot 29, C. O'Donnell Sur. No. 74 | Location. |
| Shell Pet. Corp.'s No. 3 Gubert, 70 ft. from S line and 40 ft. from W line of Lot 28, C. O'Donnell Sur. | Location. |
| Texas Co.'s No. 1 Boff, 265 ft. from S and 325 ft. from W line of C of Lot 24, H.T.&B. Sur. No. 74 | Drlg. sand 6,433 ft.; no show. |
| Texas Co.'s No. 1 Cascio, 200 ft. E of Scopel lease and 330 ft. at right angles SW of Belcher "B" lease | Sand show oil 5,148 ft.; W.O.C. |
| Texas Co.'s No. 1 F. Lieder, 330 ft. from S line and 262 ft. from W line of Lot 9, H. M. Little Sur. | Drlg. hard sand show oil 4,016 ft. |
| Texas Co.'s No. 1 W. D. Morrison, 742 ft. from N and 441 ft. from E lines of lease, C of Lot 33, A.C.H.&B. Sub., Sec. 91 | T.D. 1,124 ft., gumbo; W.O.C. |
| Texas Co.'s No. 1 Helen J. Way, NE cor. of 50-acre tract in Lot 20, Thos. Spragging Sub. | Drlg. sticky shale 2,692 ft. |
| **STRATTON RIDGE—BRAZORIA COUNTY** | |
| Amerada Pet. Corp.'s No. 5 Seaborn, Austin-Williams Sur., 600 ft. E of No. 3 and 229 ft. S at R/A | Fishing stuck drill stem 7,202 ft. |
| **WEST COLUMBIA—BRAZORIA COUNTY** | |
| Miramar Oil Corp.'s No. 3 Hogg, 100 ft. N of No. 2 and 100 ft. from W line of lease | Rigging up. |
| **BARBERS HILL—CHAMBERS COUNTY** | |
| Mills Bennett Prod. Co.'s No. 3-B Gulf fee, 25 ft. out of SE cor. of lease | T.D. 941 ft.; W.O.C. |
| Mills Bennett Prod. Co.'s No. 3-C Gulf fee, 442 ft. W along S line and 710 ft. N at right angles to S line | T.D. 5,776 ft., salt; top salt 5,740 ft.; P.B. 5,617 ft.; W.O.C. |
| Humble O. & R. Co.'s No. 5-B Kirby, Henry Griffith League, 928 ft. W of E line, 537 ft. N of S line of tract | Base salt 4,721 ft.; drlg. shale 4,887 ft. |
| Moody Corp.'s No. 5-A E. W. Barber, 100 ft. E of W line and 70 ft. N of S line of lease | T.D. 1,247 ft.; W.O.C. |
| Moody Corp.'s No. 6-A Barber, 75 ft. W or E line and 400 ft. N of S line of lease | Location. |
| Sinclair Prairie Oil Co.'s No. 15 Wilburn, Henry Griffith League, 150 ft. W of No. 14 | T.D. 4,992 ft.; comp. 816 bbls., 2 per cent wash water, ½-in. choke. |
| Sinclair Prairie Oil Co.'s No. 17-A Wilburn, 150 ft. W of No. 12 | Top salt 1,380 ft.; drlg. salt 2,600 ft. |
| Sun Oil Co.'s No. 9 Chambers Co., 181 ft. W of No. 8 and 50 ft. from N line of lease | Drlg. sand and boulders 570 ft. |
| Sun Oil Co.'s No. 5 Higgins, 125 ft. W of No. 4 | T.D. 140 ft.; W.O.C. |
| Sun Oil Co.'s No. 16 Wilburn fee, 130 ft. W of No. 15 and 40 ft. from N line of 20-acre tract in William Hodges Sur. | Drlg. shale 3,967 ft. |
| Sun Oil Co.'s No. 18 J. Wilburn, Henry Griffith League, 50 ft. N of S line, 50 ft. E of W line of lease | T.D. sand 5,130 ft.; comp. 896 bbls., ⅝-in. choke, 10 per cent wash water, 475 lbs. tubing, 500 lbs. casing. |
| Sun Oil Co.'s No. 21 J. Wilburn, Wm. Hodges Sur., 50 ft. N of No. 20 | Sand and shale 3,858 ft. |
| Texas Co.'s No. 8 Wilburn, 25 ft. W of No. 5 and 50 ft. N of S line in the Henry Griffith League | O.T.D. 4,974 ft.; set whipstock. |
| Texas Gulf Prod. Co.'s No. 2 Barber, 514 ft. W, 41 ft. S of NE cor. of lease, Henry Griffith League | Drlg. shale and lime 4,108 ft. |
| Texas Gulf Prod. Co.'s No. 8 A. E. Barber, 400 ft. S of N line and 50 ft. E of W line of lease | Drlg. shale 1,506 ft. |
| Texas Gulf Prod. Co.'s No. 2 Fitzgerald, 300 ft. from W and 80 ft. from S line of lease | Drlg. oil sand 5,447 ft.; T.S. 5,427 ft. |
| Texas Gulf Prod. Co.'s No. 4 Wilburn, Wm. Hodges Sur., 330 ft. N of S line, 50 ft. W of E line | T.D. 4,881 ft.; cmtd. 3,782 ft.; drlg. 3,946 ft. |
| Yount Lee Oil Co.'s No. 23 Chambers County, Wm. Bloodgood Sur., 116.9 ft. S of N line and 247 ft. W of E line | T.D. 4,322 ft.; est. 600 bbls. daily, ⅝-in. choke. |
| Yount Lee Oil Co.'s No. 24 Chambers County, 400 ft. W of No. 23 in line with No. 21 | Derrick. |
| Yount Lee Oil Co.'s No. 8 Phillips, Wm. Hodges Sur. | Drlg. cap rock 1,160 ft. |

(Continued on Page 154)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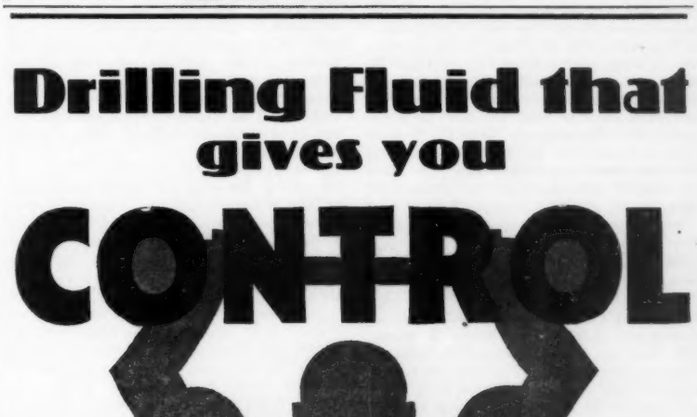


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# Dubious Outlook for Montebello Field; Quotas Are Revised in California Pools During May

By L. P. STOCKMAN
Staff Correspondent, California Fields

LOS ANGELES, Calif., May 14.—The central proration committee's revised schedule covering allowable production of crude oil for the month of May contains a number of important changes and indicates a general reallocation between fields although the total state allowable was only reduced 200 bbls. per day. During May, San Joaquin Valley fields will be allowed to produce 185,000 bbls. per day as compared with 185,125 bbls. during April. The coastal fields have a new allowable of 51,000 bbls. per day which represents a reduction of 450 bbls. from the previous allowable. The quota of Los Angeles Basin fields was stepped up from 225,925 bbls. per day in April to 226,300 bbls. daily in May. The State's allowable daily quota was reduced from 462,500 bbls., which prevailed in April to 462,300 bbls. for the current month, May.

The daily quota of Santa Fe Springs and Elk Hills was cut 2,775 bbls. and 2,700 bbls. respectively. Other reductions include 1,325 bbls. at Dominguez; 1,000 bbls. at Kettleman North Dome; 900 bbls. at Playa Del Rey; 885 bbls. at Inglewood; 850 bbls. at North Belridge; 725 bbls. at Seal Beach; 575 bbls. at Ventura Avenue and 570 bbls. at Coffee Canyon. The largest increases were made at Huntington Beach which was stepped up 4,560 bbls. per day and at Buena Vista, 2,900 bbls. per day. Other increases include 1,000 bbls. at Torrance, 930 bbls. at Brea Olinda and 900 bbls. at Coalinga. Minor changes were made in every field of the State with the exception of South Belridge, Summerland and a few small fields not itemized because of their relative unimportance.

### Montebello Outlook

If drilling operations undertaken in the Montebello Field up to the present time are any criterion of what may be expected this field will fail to come up to expectations. The status of wells now drilling and correlation work, predicated on the limited amount of data available, does not make the deep Cruz zone in this field look any too hot. Subsequent drilling may change the aspect of the situation but at the present time it appears quite dubious that the deep zone will prove as extensive as originally believed. The Standard Oil Co., due to its large acreage on top of the structure, will undoubtedly find the zone highly productive but development around the edge of the field indicates that the zone will not come up to expectations. The Universal Consolidated has already suspended drilling operations on two wells, No. 1 Alvitre at 6,950 feet and No. 1 Repetto at 7,680 feet, due to the failure to encounter the deep Cruz zone. The company killed No. 1 Cruz and proceeded to drill ahead. This well was subsequently carried down to 7,520 feet but was latter plugged back to 7,200 feet when the bit ran into a gray water sand. No. 1 Cruz was given a production test a few days ago but came in wet although it showed sufficient oil to indicate that it could be recompleted by remedial work. This well proved up the existence of deep production in the Montebello Field several months ago after considerable difficulty with water.

Three wells of the Texas Co. being drilled on the Baldwin, Barry and Prugh leases in this field should definitely determine whether unfavorable developments up to the present time are due entirely to structural conditions or whether the deep Cruz zone has been overrated. The status of No. 6 P. & B. of the St. Helens Petroleum Co., a recent spud, will depend more or less on the outcome of drilling by the Texas Co. Most of the work undertaken in the Montebello Field up to the present has been in the extreme eastern end of the structure and consequently the productivity of the center and western ends of the anticline remain untested. The Community Oil Co.'s test on the Germain property, located on the south flank and west of present work tends to indicate, however, that the western end of the structure may prove somewhat of a disappointment. If this is the case, the Union and St. Helens Petroleum Co. will not have as many drilling sites as might be expected.

The Fullerton Oil Co., which recently acquired a lease on the McGinley property for a substantial cash bonus and a one-sixth royalty, will start two deep wells on this lease in the near future and should succeed in developing substantial production due to its location with respect to structure. The Union Oil Co. has been sitting tight on its La Merced lease in this field pending developments and this policy of letting the other fellow do the pioneering appears to be entirely justified particularly in view of recent unfavorable developments. In contrast with this conservative policy, the Universal Consolidated jumped in with both feet by starting two new wells immediately subsequent to completion of the deep zone discovery and as a result has two dry holes instead of one. As has been stated, subsequent drilling might change the outlook but right now the deep Cruz zone appears to be rather limited in scope especially as far as areal extent is concerned.

### May Afford Relief

The unfavorable turn of events has proven somewhat of a shock to operators as this deep zone was expected to become an important factor in future production. On the other hand, there is general rejoicing because operators holding what now appears to be practically all of the potentially productive acreage are conservative operators and will consequently proceed with production activities in such a way as to remove any objectionable features.

### New Depth Record

General Petroleum Co., California subsidiary of Socony-Vacuum has reached the unprecedented depth of 11,125 feet in No. 1 Berry, a deep test in the South Belridge Field of Kern County, and at last reports was still making hole. This is by far the deepest hole ever drilled and the company may establish a depth record that should stand for a long time. Only minor showings have been logged up to date but it is the intention to continue drilling as long as the equipment will permit provided of course that there is some possibility of developing commercial production. In addition to establishing a new depth record, General Petroleum Co. has the distinction of successfully completing the deepest fishing job ever undertaken. This was accomplished at 10,960 feet and the job consisted of removing iron from the bottom of the hole.

General Petroleum's No. 1 Berry was spudded September 18, 1930, and drilling operations continued uninterruptedly until March, 1932, when drilling operations were temporarily suspended at 8,260 feet and the hole plugged back to 4,440 feet as a safety measure. Work was again resumed in August, 1933, and the hole carried down to its present depth. This test was started for the primary purpose of developing commercial production in a deep sand which was believed to be present below the shallow zones which have been producing for a number of years. Discovery of Temblor production in the North Dome of Kettleman Hills and subsequent proving up of both Temblor and Eocene production in the North Belridge Field tended to confirm the belief that similar horizons in the South Belridge Field should likewise be productive. Up to the present, however, South Belridge has been a blank although General Petroleum may possibly yet find something of interest.

The Monterey Exploration Co. has apparently proved up the existence of a commercial accumulation of oil and gas in the Edison area of Kern County as this company's No. 1 Duff has just been finished flowing 380 bbls. of 21 gravity oil per day from 3,342 feet. This new well with an 8⅝-inch water string landed at 3,030 feet was swabbed in at 5 a. m. on May 10 and flowed for one hour between 8 and 9 o'clock at the rate of 750 bbls. daily. The well then flowed by heads until late in the day when the company put in a one-half inch bean following which it built up to a daily rate of 750 bbls. When the bean was reduced to five-sixteenths inch the well continued to flow at the rate of 350 bbls. daily under pressure of 100 pounds on tubing and 500 pounds on casing.

This is the best well finished in the Edison area since pioneering work got under way in that district by the General Petroleum Co. several years ago and consequently additional drilling is expected to get under way in the near future.

The Monterey Exploration Co.'s new well located in close proximity to several small pumpers is believed to be producing from either the Vedder or Jewett zone. Several substantial leases were recently signed in the area and further development work may be anticipated as this work may have opened up a new field.

The Edison area is located northwest of the Mountain View Field and approximately 10 miles east and south of Bakersfield. A number of wells have been drilled in the Edison area during the past several years, but most of them have been dusters as the surface evidence of structure is practically negligible.

### Kettleman Hills

The Union Oil Co. added a new well to its list of producers in the North Dome of Kettleman Hills late this week when No. 5 Amerada-King was brought in flowing 9,975 bbls. of unusually clean 34.3 gravity oil and 10,000,000 feet of natural gas per day from 8,600 feet. This new well, which picked up the Felix siltstone at 8,598 feet and was finished with a 4¾-inch liner carrying 939 feet of perforated, was brought in under wraps and consequently the initial production does not represent its true potential. Immediately upon completion of No. 5 Amerada-King, the crew was transferred to No. 6 Amerada-King and drilling operations started. This hole has just been spudded in and should be completed along about the opening of football season in September. The Union has staked location for No. 7 Amerada-King but it is not the present intention to start this well until later in the summer.

The Superior Oil Co., which has successfully finished seven excellent wells on the Huffman lease, picked up the top of the brown shale in No. 8 at 5,974 feet and is at present rotating ahead at 6,189

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**TANKER SHIPMENTS FROM LOS ANGELES TO DOMESTIC AND FOREIGN PORTS**

| | Total this week | Daily average | Total last week | Daily average | This year to date | Same time last year |
|---|---|---|---|---|---|---|
| Intercoastal-domestic— | | | | | | |
| Fuel oil | 355,900 | 50,843 | 248,338 | 35,477 | 5,336,881 | 591,444 |
| Diesel and gas oil | 68,897 | 9,842 | 46,683 | 6,669 | 850,016 | 1,014,084 |
| Gasoline | 226,286 | 32,327 | 75,732 | 10,819 | 1,947,367 | 2,516,498 |
| Kerosene | 75,494 | 10,785 | ..... | ..... | 502,880 | 411,076 |
| Other finished oil | ..... | ..... | 15,171 | 2,167 | 15,171 | 30,635 |
| Other unfinished oil | ..... | ..... | ..... | ..... | ..... | 72,584 |
| Foreign exports— | | | | | | |
| Crude oil | 174,715 | 24,959 | 65,821 | 9,403 | 1,448,614 | 2,356,667 |
| Fuel oil | 113,474 | 16,211 | 96,934 | 13,848 | 3,895,544 | 2,480,407 |
| Diesel and gas oil | 4,842 | 692 | 36,392 | 5,199 | 1,331,949 | 1,046,294 |
| Gasoline | 82,637 | 11,805 | 70,923 | 10,132 | 1,295,788 | 2,068,234 |
| Kerosene | 94,497 | 13,500 | 168,954 | 24,136 | 549,312 | 682,289 |
| Other finished oil | ..... | ..... | ..... | ..... | 3,529 | ..... |
| Other unfinished oil | ..... | ..... | 92,908 | 13,272 | 127,271 | ..... |
| Coastwise-domestic— | | | | | | |
| Crude oil | 273,915 | 39,131 | 285,705 | 40,815 | 3,523,380 | 3,856,090 |
| Fuel oil | 251,190 | 35,884 | 108,565 | 15,509 | 3,908,577 | 3,430,947 |
| Diesel and gas oil | 61,177 | 8,740 | ..... | ..... | 311,608 | 515,655 |
| Gasoline | 258,419 | 36,917 | 440,207 | 62,887 | 3,778,017 | 4,144,561 |
| Kerosene | 6,450 | 921 | 7,923 | 1,132 | 64,414 | 81,184 |
| Naphtha distillates | ..... | ..... | ..... | ..... | ..... | 27,651 |

**TANKER SHIPMENTS FROM SAN FRANCISCO TO DOMESTIC AND FOREIGN PORTS**

| | | | | | | |
|---|---|---|---|---|---|---|
| Intercoastal-domestic— | | | | | | |
| Fuel oil | 49,995 | 7,142 | ..... | ..... | 49,995 | ..... |
| Diesel and gas oil | ..... | ..... | ..... | ..... | 448,113 | 280,531 |
| Gasoline | ..... | ..... | ..... | ..... | 72,625 | 278,226 |
| Kerosene | ..... | ..... | ..... | ..... | 197,498 | 406,405 |
| Lubricants | ..... | ..... | 10,025 | 1,432 | 18,331 | 16,400 |
| Foreign exports— | | | | | | |
| Crude oil | 72,895 | 10,414 | 76,467 | 10,924 | 666,462 | 629,722 |
| Fuel oil | 77,264 | 11,038 | 97,973 | 13,996 | 409,366 | 252,511 |
| Diesel and gas oil | ..... | ..... | ..... | ..... | 580,136 | 414,679 |
| Gasoline | 111,048 | 15,864 | 104,243 | 14,892 | 1,268,923 | 1,655,238 |
| Kerosene | 70,552 | 10,079 | ..... | ..... | 302,772 | 347,883 |
| Lubricants | 2,924 | 418 | ..... | ..... | 61,382 | 52,456 |
| Other finished oil | ..... | ..... | 2,760 | 394 | 2,760 | 3,745 |
| Other unfinished oil | ..... | ..... | ..... | ..... | 5,750 | 12,322 |
| Coastwise-domestic— | | | | | | |
| Fuel oil | 24,398 | 3,485 | 115,640 | 16,520 | 1,144,223 | 932,927 |
| Diesel and gas oil | ..... | ..... | ..... | ..... | 87,029 | 153,041 |
| Gasoline | 80,541 | 11,506 | 32,406 | 4,629 | 1,331,488 | 1,184,106 |
| Kerosene | ..... | ..... | ..... | ..... | 44,690 | 57,531 |

feet. In the Felix section of the field, the Associated Oil Co. is still held up with mechanical trouble in No. 4 Whepley at 8,581 feet but is sidetracking the fish at 8,175 feet. Kenda and the Standard are making extensive preparations to increase the scope of work in this field and judging by recent developments each will start additional wells within the next few weeks. Some of these new locations have been staked in order that no time will be lost in starting new wells upon the completion of those now under way. The Union Oil Co. is making splendid progress in redrilling No. 1 Lillis-Welsh, a deep hole in the extreme western end of the Kettleman anticline and unless something unforeseen develops the bit should reach the old bottom, 10,944 feet, some time within the next 30 days. Due to the mechanically imperfect condition of the hole, the Union will not be sure of success until after the old depth has been exceeded and an additional string of casing landed as the original fish has had a tendency to slip back into the new hole despite every attempt to cement it in place. In the Middle Dome of Kettleman Hills, the Middle Dome Corp.'s No. 58-19V which is being drilled by Petroleum Securities is rotating ahead at 5,706 feet following the landing of a string of 10¾-inch at 5,630 feet.

### Mountain View

Potential production of the Mountain View Field of Kern County is expected to be substantially increased by additional completions within the next 15 days and it is not at all improbable that the field's present potential of 9,165 bbls. will be doubled within the next 30 days. The Barnsdall Oil Co. has just finished No. 1 Mott, flowing 1,000 bbls. of clean 33.8 gravity oil per day from 6,290 feet after plugging back the hole from 6,444 feet. The well, which has been severely beaned back by using an eight-sixty-fourth inch bean, is flowing steadily. The Hogan Petroleum Co. and the Shell which have adjoining acreage are expected to begin immediate offsetting with the possibility that the former will start two offsets, one on the Wharton lease and another on the Porter Day property. Barnsdall had considerable trouble with this well before successfully completing it due to bottom water but by perseverance and good drilling succeeded in finishing an excellent well considering its location on the structure. Completion of this well incidentally extended the structure several hundred feet south of even the most optimistic expectations.

The Standard Oil Co. is expected to finish its first well in the Mountain View Field within the next 10 days as No. 1 Nichols has already picked up enough oil sand to justify the expectation that an excellent well can be anticipated. On the Ranton lease, the Standard has just spudded in No. 1 and this well should also prove to be an excellent producer upon completion some 60 days hence. The Union has just started a new well on the Wible lease in Section 23-30-28, and the showings of adjacent wells indicate that this project should show substantial production. The Petrol Well Producing Co., subsidiary of the Petrol Corp., has picked up the pay in No. 1 Bloemer and should consequently finish a new well within the next 15 days. The Mohawk, Hogan Petroleum Co., Hubro and Jergins Trust should also finish new wells within the next two or three weeks.

### New Wildcat

The Union Oil Co. has picked out what looks to be an exceptionally promising area for the site of its next wildcat to be drilled west and a little south of the East Coyote Field of Los Angeles Basin and every indication points to possible favorable results. Of course every wildcat looks rather good before actual drilling gets under way but in this instance a thorough test is justified. The Union by the way stole a march on the boys and had every bit of potentially productive acreage tied up before anyone knew what it was all about. This was quite an accomplishment in view of the fact that part of the prospective acreage contained well over 100 lots which were grouped into a community lease. The anticline has perfect closure and the dips and plunge of the structure were quite visible up until a short time ago when a new road caused some of the surface evidence to be erased. Watch this test because it is one of the few remaining bets in southern California that justifies exploration work.

Up in the Santa Maria area, the Union is making preparations to start a second shallow test in what looks like a rather promising wildcat district. The first test, No. 1 Rice, was recently abandoned at a relatively shallow depth but the data secured in this hole should prove invaluable in locating and drilling the second hole. This area, like East Coyote, shows more than usual promise. The Western Gulf, which has leased approximately 100,000 acres in the district north of the Coalinga Field, has started making new hole in its first test following an extended period during which the company landed pipe and conducted a series of formation tests. Officials of the Gulf disclaim any showings but developments during the past 30 days tend to indicate otherwise. At any rate, it would not be amiss to follow the outcome of drilling operations on this well even though there is practically no acreage available for lease within several miles of the test. There is plenty of acreage unleased north and south of the Gulf's wildcat but none along the strike of the anticline so that if this well proves to be a commercial producer the Gulf will be sitting on top of the world as far as California is concerned. This wildcat was down 8,404 feet a few days ago. The Nuoil Co.'s deep test in the Newport Field of Los Angeles Basin proved a distinct disappointment on a production test conducted a few days ago as it only showed salt water.

### Ventura Avenue

The Shell Oil Co. chalked up an excellent completion in the Ventura Avenue Field during the early part of the past week when No. 68 Taylor was swabbed in flowing 691 bbls. of clean 31.1 gravity oil and 650,000 feet of natural gas per day from 6,750 feet. This new well has a string of 8⅝-inch landed at 6,554 feet as a water string and is flowing through 6,561 feet of 2½-inch tubing. The Associated Oil Co., which recently filed abandonment notices on four wells in this field has already started rigging up the wells in question preparatory to pulling the pipe and filling the holes with cement. The wells in question are Nos. 16, 19, 33 and 44 on the Lloyd lease and all were at one time commercial producers. On Nos. 5, 7, 18, 31, 40 and 57, the company is rigging up preparatory to redrilling and deepening them in order to stimulate production. The Associated is drilling two wells to the deep 57 zone, the General one and Shell one. It will be another two or three months, however, before any of these projects is ready for production.

In the Rincon Field of Ventura County, the Chanslor-Canfield Midway Oil Co. has successfully recompleted No. 8-B Hobson pumping 80 bbls. of clean 32.1 gravity oil per day after redrilling and cleaning out the hole to bottom, 4,190 feet. The Continental Oil Co. has just spudded in No. 3 Grubb in the San Miguelito Field but it will be another three or four months before this well reaches the pay. Caroline Spalding is making preparations to complete well No. 8 on tideland permit No. 93 in the Elwood Field of Santa Barbara County and this well should be tanking oil within the next week or 10 days. The Signal Oil & Gas Co. got a wet job on well No. 2 on tideland permit No. 98 and preparations are being made to recement the 6⅝-inch water string in the Sespe at 4,990 feet. The East Elwood Petroleum Co., which recently spudded in a new test on the Bishop Evans property in the Elwood Field, has just passed the 1,000-foot level and should reach the projected depth within another 30 days.

### Dominguez

The Union Oil Co. chalked up another good well in the Dominguez Field of Los Angeles Basin during the current week when No. 33 Callender was brought in flowing 480 bbls. of clean 33.5 gravity oil per day from 6,492 feet. This well failed to come up to expectations but it is nevertheless a commercial producer. A check of drilling operations under way in this field indicates the probability that six new wells will be completed within the next 30 days unless operators decide at the last minute to carry them deeper. In the West Coyote Field of Los Angeles Basin, the Standard Oil Co. successfully completed No. 55 Emery doing 540 bbls. of 29.4 gravity oil per day from 6,055 feet after the hole had been finished with a 6⅝-inch liner including 747 feet of perforated. Standard should finish three other wells in this field within the next 30 days although, in keeping with its policy, they will probably be shut in immediately subsequent to completion. The Standard is doing this work in order to maintain normal development work and at the same time keep the maximum number of employes on the pay roll.

Drilling operations in the tideland area of the Huntington Beach Field are getting smaller as each week passes and within a short time completions will be

### IMPORTANT SOUTHERN CALIFORNIA WILDCATS

| Company, well and location— | S-T-R | Depth | Status |
|---|---|---|---|
| Clayton, G. L., No. 1 Clearwater, Los Angeles Co. | 31- 3-12 | 6,465 | sd. sh. drilling |
| Clark & Miller, No. 1 Hermosa, Los Angeles Co. | 31- 3-14 | rig | rigging up |
| Dominguez Oil Co., No. 1 Dominguez, Los Angeles Co. | 34- 3-13 | 4,770 | redrilling |
| Quinn, J. B., No. 1 Dominguez, Los Angeles Co. | 3- 4-13 | 4,067 | redrilling |
| Kelly & Son No. 1 Torrance, Los Angeles Co. | 7- 4-13 | 6,435 | suspended |
| Wehrman, J. K., No. 1 San Pedro, Los Angeles Co. | 14- 5-14 | 1,660 | suspended |
| Nudson, T. T., No. 1 Inglewood, Los Angeles Co. | 17- 2-14 | 2,814 | sd. sh. drilling |
| Scientia Oil Co., No. 1 Inglewood, Los Angeles Co. | 7- 2-14 | rig | skidding rig |
| Standard Oil Co., No. 1 Inglewood Deep, Los Angeles Co. | 7- 2-14 | 1,439 | sd. sh. drilling |
| Pacific Western, No. 1 Inglewood Deep, Los Angeles Co. | 8- 2-14 | 626 | to be deep test |
| Kleps Oil Co., No. 1 Inglewood, Los Angeles Co. | 17- 2-14 | rig | rigged up |
| Wilshire, No. 2 Potrero Deep, Los Angeles Co. | 27- 2-14 | 6,741 | sd. sh. drilling |
| Community Oil Co., No. 1 Montebello, Los Angeles Co. | 34- 1-11 | 7,447 | cemented |
| Universal Consd., No. 1 Montebello Deep, Los Angeles Co. | 5- 2-11 | 7,505 | plug 7,110 ft. |
| Universal Consd., No. 2 Montebello Deep, Los Angeles Co. | 5- 2-11 | 6,950 | suspended |
| Universal Consd., No. 3 Montebello Deep, Los Angeles Co. | 5- 2-11 | 7,680 | suspended |
| Texas Co., No. 1 Montebello Deep, Los Angeles Co. | 6- 2-11 | 6,774 | sd. sh. drilling |
| Standard, No. 1 Montebello Deep, Los Angeles Co. | 6- 2-11 | 4,772 | sd. sh. drilling |
| St. Helens, No. 1 Montebello Deep, Los Angeles Co. | 6- 2-11 | 2,741 | sd. sh. drilling |
| Frontier Oil Co., No. 1 Pico, Los Angeles Co. | 7- 2-11 | 1,500 | cemented |
| Midfield Oil Co., No. 1 Pico, Los Angeles Co. | 19- 2-11 | 4,200 | hd. sd. drilling |
| Barstow Oil Co., No. 1 Saugus, Los Angeles Co. | 35- 5-16 | 2,136 | suspended |
| Barstow Oil Co., No. 2 Saugus, Los Angeles Co. | 35- 5-16 | mtl. | building rig |
| Alpha Oil Co., No. 1 Calabasas, Los Angeles Co. | 22- 1-18 | 1,339 | resuming work |
| International Dev. Co., No. 1 Saugus, Los Angeles Co. | 34- 5-16 | 212 | cemented |
| Alexander, W. L., No. 1 Sunland, Los Angeles Co. | 7- 2-14 | 1,248 | suspended |
| Black Eagle Oil Co., No. 1 Huntington, Orange Co. | tideland | 3,985 | suspended |
| Nuoil Co., No. 1 Newport, Orange Co. | 29- 6-10 | 6,465 | prod. test |
| Harding, John, No. 1 Fairview, Orange Co. | 9- 6-10 | 722 | sd. sh. drilling |
| Speik Oil Co., No. 1 Fairview, Orange Co. | 9- 6-10 | 427 | sd. drilling |
| Explorers Oil Co., No. 1 Fairview, Orange Co. | 9- 6-10 | .... | location |
| Placentia Dev. Co., No. 1 Placentia, Orange Co. | 31- 3- 9 | 4,531 | redrilling |
| Mid-Rich Drlg. Co., No. 1 Atwood, Orange Co. | 26- 3- 9 | 630 | suspended |
| Rubens, Sy., No. 1 Atwood, Orange Co. | 19- 3-10 | 2,368 | cleaning out |
| Union, No. 1 Coyote, Orange Co. | 22- 3-10 | .... | location |
| Bardeen Pet., No. 1 Coyote, Orange Co. | 13- 3-10 | 4,320 | hd. sd. drilling |
| Bridger, J., No. 1 Coyote, Orange Co. | 15- 3-10 | 600 | cemented |
| Severns Drlg. Co., No. 2 Coyote, Orange Co. | 24- 3-11 | 7,272 | rigging up |
| Great American Pet., No. 1 Chino, San Bernardino Co. | 18- 2- 8 | 2,642 | suspended |
| Great American Pet., No. 2 Chino, San Bernardino Co. | 18- 2- 8 | 2,876 | sd. sh. drilling |
| Tehama Pet., No. 1 Santa Ana Canyon, San Bernardino | 33- 2- 8 | 1,295 | recemented |
| San Diego Pet. Co., No. 1 Chula Vista, San Diego Co. | 32-18- 2 | 1,663 | sd. sh. drilling |

### IMPORTANT NORTHERN CALIFORNIA WILDCATS

| Company, well and location— | S-T-R | Depth | Status |
|---|---|---|---|
| General Pet., No. 9 Capitan, Santa Barbara Co. | 32- 5-30 | rig | rigged up |
| Shell Oil Co., No. 2 Capitan, Santa Barbara Co. | 32- 5-30 | 1,771 | pumping test |
| Lincoln Drlg. Co., No. 3 Summerland, Santa Barbara Co. | 21- 4-26 | 2,803 | suspended |
| Dietzmann, J., No. 1 Summerland, Santa Barbara Co. | 16- 4-26 | 3,829 | suspended |
| Fairview Oil Co., No. 1 Pueblima, Santa Barbara Co. | 18- 7-24 | 2,186 | hd. sd. drilling |
| Barnsdall-Rio Grande, No. 8 Doty Elwood, Santa Barbara | 15- 4-29 | 4,868 | redrilling |
| Signal Oil & Gas Co., No. 2 Elwood, Santa Barbara Co. | tideland | 5,415 | cleaning out |
| East Elwood Pet. Co., No. 1 Elwood, Santa Barbara Co. | 14- 4-29 | 1,000 | sd. sh. drilling |
| Hastain & Stone, No. 1 Goleta, Santa Barbara Co. | 9- 4-28 | rig | rigging up |
| Cuyama Oil Co., No. 1 Cuyama, Santa Barbara Co. | 12-10-27 | 4,002 | suspended |
| Union, No. 2 Santa Maria, Santa Barbara Co. | 19-10-34 | .... | location |
| Woodrow Pet., No. 1 Rincon, Ventura Co. | 4- 3-24 | 7,612 | suspended |
| Continental, No. 3 San Miguelito, Ventura Co. | 23- 3-24 | 621 | sd. sh. drilling |
| Hancock Oil Co., No. 1 Fillmore, Ventura Co. | 13- 4-19 | 3,357 | plug pipe leak |
| Oil Ridge Oil Co., No. 1 Fillmore, Ventura Co. | 1- 4-19 | 642 | cleaning out |
| Oak Mountain Oil Co., No. 1 Sespe, Ventura Co. | 1- 4-20 | 2,697 | suspended |
| Kneiper & Atha, No. 1 Bardsdale, Ventura Co. | 7- 3-19 | 1,710 | abandoned |
| Duke Oil Co., No. 1 Bardsdale, Ventura Co. | 6- 3-10 | .... | material |
| Bolsa Chica Oil Co., No. 1 Snow, Ventura Co. | 4- 4-18 | 2,494 | will deepen |
| Williamson & Donaher, No. 1 Simi, Ventura Co. | 36- 3-18 | 915 | sd. sh. drilling |
| Prop. Service Corp., No. 1 Lloyd, Ventura Co. | 24- 3-23 | mtl. | building rig |
| Laing & Jacobs, No. 1 Shiells, Ventura Co. | 32- 4-19 | 701 | suspended |
| Kirk, W. A., No. 1 Sulphur Mountain, Ventura Co. | 21- 4-22 | 1,954 | suspended |
| Mosher, J. W., No. 1 Santa Paula, Ventura Co. | 22- 4-21 | 1,920 | testing |
| Las Posas Pet., No. 1 Posas, Ventura Co. | 22- 3-20 | 6,135 | suspended |
| International Oil Developers, No. 1 Conejo, Ventura Co. | 33- 2-20 | 3,068 | to set pipe |
| Hub Pet. Co., No. 1 Gould Hills, Kern Co. | 22-29-21 | 6,840 | suspended |
| Shell Oil Co., No. 1 Gould Hills, Kern Co. | 21-29-21 | 4,150 | reaming |
| Standard Oil Co., No. 1 McKittrick, Kern Co. | 15-30-22 | 2,000 | sd. sh. drilling |
| Casa Mira Oil Co., No. 1 Belridge, Kern Co. | 29-28-20 | 4,982 | cemented |
| General Pet., No. 1 Belridge, Kern Co. | 30-28-21 | 11,125 | br. sh. drilling |
| Union Oil Co., No. 18 Belridge, Kern Co. | 36-27-20 | 7,130 | br. sh. drilling |
| Associated, No. 1 Lost Hills, Kern Co. | 2-26-20 | 7,858 | suspended |
| Inland Pacific, No. 1 Semi-Tropic, Kern Co. | 29-25-21 | 1,118 | suspended |
| Howells Bros., No. 1 Round Mountain, Kern Co. | 32-28-29 | 2,371 | hd. sd. drilling |
| Semaphore Oil Co., No. 1 McVan Area, Kern Co. | 14-27-27 | 1,172 | sd. sh. drilling |
| Ohio Oil Co., No. 1 Buena Vista Lake, Kern Co. | 31-31-26 | 7,400 | sd. sh. drilling |
| Caravel Pet., No. 1 Edison, Kern Co. | 19-30-30 | 1,498 | resume work |
| Alta Oil Co., No. 1 Union Avenue, Kern Co. | 6-30-28 | 6,457 | prod. test |
| Mountain View Oil Co., No. 1 Mountain View, Kern Co. | 25-30-28 | 2,051 | sd. sh. drilling |
| Severns Drilling Co., No. 1 Mountain View, Kern Co. | 24-30-28 | 6,097 | suspended |
| Union Oil Co., No. 2 Mountain View, Kern Co. | 23-30-28 | mtl. | building rig |
| Hogan Pet. Co., No. 4 Mountain View, Kern Co. | 29-30-29 | 5,090 | sd. sh. drilling |
| Standard, No. 1 Mountain View, Kern Co. | 19-30-29 | 5,685 | oil and gas |
| Commanche Oil Co., No. 1 Commanche, Kern Co. | 15-32-29 | 3,373 | hd. sd. drilling |
| Badger Oil Co., No. 1 Wheeler Ridge, Kern Co. | 21-11-19 | 5,880 | suspended |
| Russ Oil Syndicate, No. 1 Kingsbury, Fresno Co. | 28-12-11 | 4,004 | suspended |
| Bergman, Harry, No. 1 Kingsburg, Fresno Co. | 12-12-11 | 5,516 | suspended |
| Graham & Loftus, No. 1 Raisin City, Fresno Co. | 20-15-18 | 5,906 | suspended |
| Emerich Oil Co., No. 1 Mendota, Fresno Co. | 35-13-13 | 4,575 | suspended |
| Western Gulf, No. 1 S.P., Fresno Co. | 15-17-15 | 8,360 | hd. sh. drilling |
| Hogan Pet. Co., No. 1 Joaquin Ridge, Fresno Co. | 28-20-16 | 6,605 | suspended |
| Kent & McDonald, No. 1 Carrizo Plains, San Luis Obispo | 3-22-22 | 3,830 | suspended |
| Farrel Pet., Well No. 1, San Luis Obispo Co. | 18-31-12 | 1,714 | sd. sh. drilling |
| Commonwealth Consd. Gas Co., No. 1 Tulare Lake, Kings | 21-22-20 | 1,550 | gr. sd. drilling |
| Armadillo Oil Co., No. 1 Tulare Lake, Kings Co. | 32-22-20 | 1,316 | wet |
| Tulare Basin Oil Co., No. 1 Tulare Lake, Kings Co. | 2-23-19 | 1,192 | test WSO |
| Tulare Basin Oil Co., No. 2 Tulare Lake, Kings Co. | 2-23-19 | 1,200 | suspended |
| Douglas, J. M., Well No. 1, Monterey Co. | 36-22- 9 | 3,298 | br. sh. drilling |
| Oakdale Oil Co., No. 1 Oakdale, Stanislaus Co. | 5- 2-10 | 4,760 | hd. sd. drilling |
| Pacific Northern Oil Co., No. 1 Guinda, Yolo Co. | 23-12- 3 | 6,760 | suspended |
| Buttes Oilfields Co., No. 1 Marysville, Sutter Co. | 35-16- 1 | 2,731 | gas—shut in |
| Buttes Oilfields Co., No. 2 Marysville, Sutter Co. | 35-16- 1 | 4,320 | suspended |
| Milham Exploration Co., No. 1 Tracy, San Joaquin Co. | 5- 4- 5 | 3,871 | hd. sh. drilling |
| Orland Oil Synd., No. 1 Orland, Tehama Co. | 31-23- 3 | 3,790 | suspended |
| Mid-Valley Oil Co., No. 1 Orland, Tehama Co. | 14-24- 3 | .... | location |
| Tehama Pet., No. 1 Murdock, Glenn Co. | 10-22- 5 | 620 | suspended |
| Pure Oil Co., No. 1 Madera, Madera Co. | 7-10-14 | rig | rigging up |

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the exception rather than the rule. The Standard, which refrained from doing any development work while operators in the town lot were busily engaged in whipstocking their respective wells out into the state tidelands has subsequently begun to develop its Huntington lease and the Pacific Electric lease. As a result of this work, the company should finish two new wells within the next 30 days. The state director of finance has announced that the department has received checks for $6,039 from the Wilshire Oil Co. and $412 from the Ambassador Petroleum Co. which constitutes the May, 1934, payment on back royalty from oil obtained from the Huntington Beach tidelands. Back royalties are being paid to the State in 48 monthly installments.

During the early part of the current week, the director of finance agreed to a postponement of the State's suit against a number of Huntington Beach operators upon the request of the defendants. Deputy Attorney General Campbell agreed to the continuance but declared that, "while the State is reluctant to consent to further delay of this matter, it is recognized that a defendant in such a matter is usually entitled to one continuance. Coupled with this is the expressed policy of the state government to compromise and settle cases arising out of the Huntington Beach Field situation with as little expense as possible to the State and to operators.

"Since last September, when the first suits were filed by the State against operators and for some time prior thereto, the State has been gathering evidence of the trespasses in the tide and submerged lands adjacent to the city of Huntington Beach. The State's case now is complete and the State is prepared to proceed against such operators and to establish that the trespasses have been committed. As the situation now appears, this will be the last continuance to which the State will consent. On May 21, the State will be present in court at Santa Ana for the purpose of presenting against all operators involved all the evidence gathered over the various months. The State will at that time demand orders for surveys of the various wells and injunctions permanently closing the wells of those operators who have been unwilling to accept the liberal compromise proposal of the State."

### Long Beach

In the Long Beach Field of Los Angeles Basin operators completed two new wells although the initial daily production of each was relatively insignificant. The Selile Oil Co.'s No. 1 Signal was finished on the beam doing 71 bbls. of 23.6 gravity oil per day from 4,550 feet. R. L. Goetz' No. 1 Long Beach was completed on the beam pumping 91 bbls. of 23.1 gravity oil per day from 4,499 feet but the output was still cutting approximately 35 per cent at a late hour. In the Inglewood Field, the Scienta Oil Co. has skidded the rig for No. 1 Machado and should begin installing rotary drilling equipment some time during the next week or 10 days. The Pacific Western Oil Co. is making good footage in No. 17 Rubel which is a projected Miocene test but it will be another two or three months before this well reaches the depth at which this formation should be encountered. In the Playa Del Rey Field, the Ohio Oil Co. is installing pumping equipment on No. 14 Recreation following its completion at 3,861 feet.

### BRIDGEPORT HAS EXPO EXTRA

A "Tulsa Exposition Extra" of the Bridgeport Bulletin has been prepared by the Bridgeport Machine Co., Wichita, Kans., for distribution at the oil show. It describes the company's organization, services and products.

### F. H. HAMILTON DIES

LOS ANGELES, Calif., May 12.—Fred H. Hamilton, vice president of the Petrol Producing Co., and for a number of years manager of the land department of the Barnsdall Oil Co., is dead in Los Angeles.

## Kansas Fields

(Continued from Page 129)

in Viola lime at 3,467-76 feet and was plugged back:

Marileen Oil Co. and Goering Bros. were building rig for No. 1 Decker, NW cor. SE Section 20-18-1w, a wildcat; Roth and Faurot, rigged up to drill deeper from 3,018 feet in No. 1 Carlson, NE NW NE Section 24-19-3w.

### Rice County

Lario Oil and Gas Co. No. 1 Foote, SW cor. NE Section 7-20-9w, Rice County, was acidized in silicious lime at 3,278-93 feet. It pumped 73 bbls. of fluid in six hours and later 50 bbls. of fluid in five hours, 4 per cent sediment and water.

Gypsy Oil Co.'s No. 1 E. Malone, SW cor. NE Section 18-20-9w, swabbed 197 bbls. of oil and 346 bbls. of water in 11 hours from Siliceous lime at 3,349-59 feet. It had not been acidized.

Mid Kansas Oil and Gas Co. completed No. 2 Proffitt (a twin), NW cor. SE Section 18-20-9w, as a gas well. It is good for 2,750,000 feet per day at 2,281-86 feet, broken lime.

Gypsy Oil Co.'s No. 3 M. H. Malone was completed NW SE NW Section 18-20-9w. It pumped 881 bbls. in 24 hours from silicious lime at 3,304-16 feet. It was not acidized.

Atlantic Oil Producing Co.'s No. 1 Schmidt, 660 feet from N line and 440 feet from E line SE quarter Section 10-19-10w, had silicious lime at 3,307-30 feet with a small showing of gas and oil and 1,800 feet of water in the hole and was abandoned.

National Refining Co. and others completed No. 3 Sherman, NE SE SW Section 16-19-9w. It was plugged back to 3,250 feet in conglomerate topped at 3,187 feet and pumped 127 bbls. in 24 hours.

Ramsey and others' No. 1 Wolfe, SW NE SE Section 31-19-9w, was completed. It pumped 828 bbls. of oil and 42 bbls. of water in 24 hours from Siliceous lime at 3,241-68 feet. It had been acidized.

National Refining Co. and others had rig on the ground for No. 2 Reese, SE SW SW Section 16-19-9w.

### Ellsworth County

Smith and Ash and others' wildcat test in SE cor. Section 13-17-10w is a 200-bbl. well. It was completed in Siliceous lime at 3,260-80 feet after an acid treatment. It pumped 205 bbls. of oil and 30 bbls. of water in 24 hours.

### Russell County

Tom Palmer's No. 1 Woelk, SE cor. NW Section 22-13-14w, Russell County, had 2,800 feet of oil in the hole from silicious lime at 3,277-80 feet, total depth.

In the northwestern corner of Russell County Carl Lebsack had cellar dug for a wildcat test No. 1 Spicer, NW cor. Section 21-11-15w.

### Clay County

Seevers and others abandoned their test No. 1 Myers, NE NW NW Section 4-10-4, in Clay County. It found Mississippi lime at 1,837 feet and drilled to 1,872 feet. It had a 2-bbl. showing at 1,837-54 feet.

In the same county, Seidel Bros. have a machine in for No. 1 Younker, C S half SE NW Section 21-9-4.

### Rooks County

In Rooks County Phillips Petroleum Co.'s wildcat, No. 1 Dopita, C SW SW Section 31-8-17w, was acidized in Oswald lime and pumped 14 bbls. of oil and 82 bbls. of water in 12 hours. It had been drilled to 3,255 feet, found a hole full of water, and was plugged back to 3,217 feet.

### FRANK W. ESSON DIES

PETROLIA, Ontario, May 12.—Frank W. Esson, formerly well known in Petrolia refining circles, died recently at Detroit, Mich., aged 78. A native of Guelph, Ontario, he came to Petrolia as a young man and was later associated with the Harrison Corey and subsequently the J. L. Englehart oil enterprises.

# Seven Completions Reported in Michigan Fields; Producers Finished in Four Separate Districts

By PAUL A. ELLIOTT
Staff Correspondent, Michigan Fields

MUSKEGON, Mich., May 14.—Michigan production during April increased 30,618 bbls. over March with the daily average amounting to nearly 2,000 bbls. April's one day less cut the monthly increase 29,000 bbls., or the increase would have neared 60,000 bbls. The April total was 870,457 bbls. compared with 839,839 bbls. in March. The total for the Porter Pool in April was 584,992 bbls., about 65 per cent of the State's total.

The number of producing oil wells increased from 888 to 902. The daily averages for 11 fields in April were: Porter, 19,500 bbls.; Greendale, 4,384 bbls.; Vernon, 2,415 bbls.; Yost, 882 bbls.; Leaton, 670 bbls.; Muskegon, 471 bbls.; Ogemaw, 304 bbls.; Oceana, 184 bbls.; Saginaw, 113 bbls.; Montcalm, 89 bbls. and Cass, 3 bbls.

More than 2,000 bbls. of new daily production was added during the past week by the completion of seven oil wells including producers in four fields: Vernon, three; Porter, two; and Greendale and Ogemaw, one each. Three were dry although two were to be carried deeper, only one being a "duster."

Pure Oil Co.'s No. 3 W. W. Hoyt, SE SE NW Section 21-13n-1w, Porter Township, was the biggest completion making 289 bbls. in the first four hours for an estimated 1,500 bbls. a day. It was completed at 3,412 feet. Theodore Oil Co.'s No. 5 J. W. Campbell, NW SE NW Section 17, was good for an estimated 100 bbls. a day in the Dundee at 3,418 feet before water made it necessary to plug back and test further.

### Complete Three Wells

Vernon Township, Isabella County, completed three wells ranging from 60 to 200 bbls. a day in the Dundee. J. V. Wicklund's No. 4 Dan Carmichael, SE SW NE Section 22-16n-4w, was estimated at 200 bbls. a day. Mellon-Pollock Oil Co.'s No. 3 Lewis Thayer, SE NE SE Section 22, made about 150 bbls. initial. Empire Oil & Refining Co.'s No. 1-B E. Walsh, NW NW SW Section 15, made about 60 bbls. of oil and considerable water. Dokenva Gas Corp., predecessor to the Empire, brought in No. 1 Walsh following the first northwest extension by Russell and Tope on No. 1 Reakes. A fourth extension test in this direction is now being drilled by Columbia Oil & Gas Co. on its No. 1 Simpson in Section 16.

Michigan Producers & Refiners and Leonard Petroleum Co. brought in No. 1 Woern, NE SE NE Section 15-14n-2w, Greendale Township, Midland County, as a 75 to 100-bbl. producer at 3,532-48 feet in the Dundee.

Theodore Oil Co.'s No. 3 Ogemaw Country Club, NE SW SE Section 20-22n-2e, West Branch Township, Ogemaw County, was good for about 40 bbls. a day in the upper Traverse at 1,772 feet.

Mammoth Petroleum Co.'s No. 1 Decoury Stough, NW SW SE Section 2-16n-4w, Vernon Township, Isabella County, was dry at 3,781 feet after topping the Dundee at 3,741 feet.

Great Eastern Oil Co.'s No. 1 Brennan, NW SW SE Section 27, Porter Township, which extended the pool about a mile south, was converted from a hole full of oil to an estimated 100-bbl. producer by the use of acid. The well originally was Bradner-Vaughan Development Co.'s No. 1 Brennan.

Daily crude oil Co.'s No. 2 Christensen heirs, Section 10, Home Township, was boosted from 116 to more than 600 bbls.

Pure's No. 2 A. J. Neitzke, SW NW SW Section 21, drilled deeper, made more than 600 bbls. instead of 450 bbls., while No. 3 A. J. Neitzke, NE NW SW Section 21, estimated at 2,400 bbls. a day exceeded 4,100 bbls. Deepening of McClanahan Oil Co.'s No. 1 Heintz, Section 24, Ogemaw Township, Ogemaw County, deepened from 2,780 to 2,840 feet, was rated at 60 instead of 40 bbls. Salt water was encountered at the bottom of the hole so it was plugged back to 2,835 feet and swabbed.

Theodore Oil Co. has started its No. 1 Sherwin in Section 13, Home Township, Montcalm County. Old Dutch Oil & Gas Co.'s No. 1 Fowley, Section 11, Belvedere Township, is ready to start.

### Mecosta County

J. M. Taggart and others have abandoned No. 6 Robert S. Fish, C NW NW Section 9-14n-9w, Austin Township, Mecosta County.

Plans for a new test in the northern part of the lower peninsula in Lyons Township, Roscommon County, are being made by the Black Diamond Petroleum Syndicate, organized by Jack B. Gardner, formerly of Midland.

### Western Michigan

Muskegon Oil Corp. struck salt water in the upper Traverse formation at 1,852 feet in its new Egelston Township wildcat test, No. 1 A. Gasser, SE SW NE Section 27. It will be carried at least to the Dundee and probably to the Monroe.

After plugging No. 1 Cozy Ackerman, Section 31, Elbridge Township, Oceana County, H. C. Nelson of Muskegon, is preparing to start a new well on the Joe Christman lease, Section 25, Elbridge Township, about a mile northwest of production.

### New Locations

Ten permits to drill were issued in four counties. Work already has been started on several. They are: W. Hunter Atha's No. 1-B F. H. Taulker, SW NW SE Section 7-14n-1w, Lee Township, Midland County; Youman-Burke Oil Co.'s No. 1 William La Fever, C SW NW Section 32-15n-6w, Sherman Township, Isabella County; Daily Crude Oil Co.'s No. 3 H. P. Christensen, SW SW SE Section 3-12n-6w, Home Township, Montcalm County; McClanahan Oil Co.'s No. 1 John Hicks, SW NW SW Section 27-15n-3w, Denver Township, Isabella County; McClanahan-Spillane's No. 1 J. Oliver, SE SW SE Section 23-13n-1w, Porter, Midland; McClanahan Oil Co.'s No. 1 Converse, SE NE NW Section 28-14-2w; Mon-Mar Oil Corp.'s No. 1 Scott, SE SW NE Section 8, Greendale; Mellon-Pollock Oil Co.'s No. 4 Lewis Thayer and others, SW SW SE Section 22-16n-4w; No. 3 Joseph Crowley, NW NW NE Section 27, also Vernon Township, and Reed Oil Co.'s No. 1 William J. Brinen, SW SW NW Section 13-13n-16w.

It is reported Pure Oil Co. is preparing to drill on the Hans Hansen farm, 3½ miles northeast of Edmore near the Daily Crude Oil Co.'s three Christensen wells. A company has been formed by Eaton Bates of Belding to drill on a farm north of Edmore in Section 16, Home Township. Old Dutch Oil & Gas Co. is planning to drill on the Virgil Sheets farm, 8¾ miles northwest of Edmore in Millbrook Township. Eddie M. Self of Muskegon will drill for a syndicate comprised of Detroit and Muskegon residents. A. H. McClure is drilling on the August Johnson farm, 1¾ miles north on the Wyman Highway.

# Twenty-two Completions in Eastern Field; Twelve Producers and 10 Gas Wells

By STAFF CORRESPONDENT

PITTSBURGH, Pa., May 14.—In keeping with the renewed activity now apparent in the lower Eastern fields, there were 22 completions during the week of which 12 were producers with an initial production of 106 bbls., and 10 gas wells. There were also reports of three dry holes. The majority of the wells were in Southeast Ohio.

### SOUTHEAST OHIO

The best well for the week was a gas well in Muskingum County, Southeast Ohio, where Hope Oil & Gas Co. completed a second test on the Wade Swingle farm in the southwest part of Brush Creek Township and Section 9. It was drilled in the Clinton sand at a depth of 4,100 feet and is rated at 7,000,000 feet a day.

In this county, there was also a fair oil producer. In the NW Section 7, Jackson Township, Pure Oil Co. completed a test on the Russell L. Moran farm in the Clinton sand at a depth of 3,122½ feet and it produced 20 bbls. the first day natural which after shot increased to 50 bbls. a day.

In Columbiana County, Schaler Oil & Gas Co. completed a second test on the Calvin Powell farm in the SW Section 19, Knox Township. It was drilled in the Berea grit at 729 feet and is showing for 2 bbls. a day after shot.

In Lorain County, Wittmer Oil & Gas Properties drilled a test on the Thomas Gammon farm, Lot 97, Grafton Township, in the Clinton sand at a depth of 2,636 feet. It is a gas well gauging at 1,470,000 feet a day.

In the shallow sands of Medina County, Oko Oil & Gas Co. completed No. 41 on the Jesse McVicker farm on the northwest Lot 2, Chatham Township. It was drilled in the Berea grit at 515 feet and produced 6 bbls. the first day after shot.

In Meigs County Meigs Developing Co. completed a test on the Mattie Henderson farm, Lot 152, Lebanon Township. It was completed at 2,145 feet and is a gas well gauging at 290,000 feet a day.

In Monroe County, there were two completions. In the NE Section 11, Bethel Township, J. C. Christy and others completed a test on the Oscar Curtis farm in the lime at 1,413 feet and it produced 3 bbls. the first day after shot. In Section 13, Seneca Township, E. G. Cunningham drilled a test on the J W. Reed heirs farm in the Berea grit at 1,785 feet and it will make a light gas well.

In Washington County there were several completions. In Section 40, Salem Township, R. O. Wooster and others completed No. 3 on the Mary E. and L. C. Becker farm in the Buell Run sand at 286 feet and it will make a quarter-barrel pumper. In Section 28, Lawrence Township, the John B. Braden estate and others completed No. 3 on the George P. Miller farm in the Second Cow Run sand at a depth of 996 feet and it produced 1 bbl. a day natural which was not helped by shot. It is about 300 feet north of No. 2. In Section 8 of this township, J. T. Campbell and others completed a test on the James King heirs farm in the Keener sand at a depth of 1,570 feet and it produced 3 bbls. the first day natural and was shot. This well was drilled down from the Second Cow Run sand and is 1,300 feet southeast of the test on the Olive King farm. In Palmer Township, Lot 798, McIlvain and Phillips drilled a test on the Arthur E. Pugh farm through the Cambridge lime to a depth of 701 feet. It was a dry hole. In the southeast part of Lot 1,078, of the same township, M. A. Martin and others drilled No. 4 on the M. A. Martin farm through the Cow Run sand to a depth of 644 feet. It was also a dry hole.

### WEST VIRGINIA

There were five producers and six gas wells completed in West Virginia during the week and in addition a number of wells were reconditioned and production improved. An important test was completed in the Lost Run Pool district in Clay district, Ritchie County, West of the Injun sand streak, Glen F. McBurney and others drilled a test on the Harrison Ball farm through the Injun sand to 1,807 feet. This formation proved dry but there was a showing of about 300,000 feet of gas a day in the Salt sand which will be saved.

There were two completions on the Injun sand streak in Lost Run Pool. Richards Farm Oil Co. completed No. 4 on the Corlie Ball lease in the Injun sand at 1,884 feet showing for 20 bbls. a day. On the Catherine Ball farm, Lucas and Mahaney completed No. 3 in the Injun

(Continued on Next Page)

### NEW EAST TEXAS MAP

A geological and survey map covering 26 counties in the East Texas district has just been completed by Keith A. Spitznagel, consulting geologist and engineer, 203 New Swann Building, Tyler, Tex. The map shows the Woodbine sand area in the district, dry holes with name of operator, landowner, elevations, tops and bottoms of the principal geologic markers, surface outcrops, faults, and much more important and interesting data necessary to the operator who desires following the play or investing in the district.

The map is built to scale and required five months to assemble data and draft. Information on the dry holes and wells shown on the map was taken from logs and information given by several major companies operating in the district. The surface data was taken from the publications of the U.S.G.S., and from published and unpublished reports. Survey lines and other pertinent data is shown on the map which is printed on paper or linen and is useful for contouring work.

XUM

## Eastern Fields

(Continued from Preceding Page)

sand at 1,815 feet showing for only 3 bbls. a day.

In this pool, Richards Farm Oil Co. has completed a rig for No. 6 on the Frank R. Ball farm on the center of the streak. Boehm and Strickler Oil Co. has reached 1,560 feet in No. 6 on the Boehm and Strickler lease.

In Calhoun County, Richter Oil Co. completed No. 4 on the Z. O. Cooper farm in Sheridan district in the Salt sand at a depth of 2,003 feet, showing for 15 bbls. a day. It is on Three Mile Creek.

In Wirt County, on the waters of Oil Rock Run, W. C. Patterson completed No. 22 on the C. E. Vandeventer lease in the Clay district in the Cow Run sand and it will make a half-barrel pumper. In this district, Dailey and Benedict completed No. 6 on the Joseph L. Adams farm in the Mitchell sand at 643 feet. It will make a bout 3 bbls. a week.

On Broad Run in Washington district, Pleasants County, South Penn Oil Co. cleaned out and shot No. 5 on the Isaac Pethel farm of 24 acres and increased the daily production from 7 to 13 bbls.

### Gas Wells

In Cabell County, Empire State Gas Co. completed a small gas well on the L. and L. Adkins farm in McComas district in the shale at a depth of 3,408 feet.

In Calhoun County, F. F. McIntosh completed a fourth well at No. 5 location on the O. S. Bennett farm in Sherman district. It was drilled in the Injun sand at 1,775 feet and is a light gas well, natural.

In Marshall County there were two completions. In Liberty district, Manufacturers Light & Heat Co. completed No. 3,512 on the James Reid farm at a total depth of 3,250 feet. It was completed in the Fifth sand at which there was a showing of about 400,000 feet a day at 3,035-37 feet. In this district, Guy B. and A. B. Patterson completed No. 3 on the C. and A. B. Williams farm in the Gordon Stray sand at 3,050 feet, showing for over 250,000 feet a day.

In Roane County, United Fuel Gas Co. completed No. 4,385, a test on the Frank Looney farm in Smithfield district in the Injun sand at a depth of 2,147 feet. It gauges at about 140,000 feet a day, natural.

### Drilling in West Virginia

In Boone County, Pure Oil Co. is building a rig for No. 67 on the Federal Coal Co. tract in Sherman district. No. 65, same lease, is drilling at 2,430 feet and No. 66 at 1,394 feet. In this district, Godfrey L. Cabot, Inc., is drilling at 1,400 feet in No. 53 on his lease of the Federal Coal Co. property and is building a road to a location for No. 54. This operator has a location for No. 6 on the Mary Dickson lease, a rig standing for No. 3 on the J. Q. Dickson farm, and is rigging up for No. 3 on the Central Trust Co. tract. In Washington district, the same operator is drilling at 505 feet on the Sidney White farm and is spudding in for a test on the Henry Keadle farm. Pond Fork Oil & Gas Co. is drilling at 765 feet in No. 17 on the Cole and Crane lease.

In Cabell County, Leonard Paugh is setting a drilling machine on his own property in Guyandotte district. The three wells drilling in this district are: May Gas Co.'s No. 1, at 1,550 feet, on the G. I. Neal farm; Graham Gas Co.'s No. 1, at 1,850 feet, on the Frank Marchetti farm; and Guyan Valley Gas Co.'s No. 1 at 1,575 feet on the Colored Children's Home. In McComas district, the following wells are drilling: Madison Gas Co.'s No. 2 on the Wade H. Holton farm, at 1,350 feet; West Virginia Gas Corp.'s test on the George Pruett farm, at 1,968 feet, and the same on the John J. Porter farm at 1,450 feet.

In Ceredo district, Wayne County, J. H. Wilson has spudded in and started drilling on the Hamilton Land Co. lease.

In Doddridge County, Howard M. Dilly has been issued a permit on the Eli Fleming farm in West Union district. In Calhoun County, Eastern State Gas Co. is rigging up for a second test on the A. J. Boggs farm in Washington district. Kenny and Phillips are down 1,969 feet in drilling deeper No. 1 on the J. C. Carpenter farm. Everett Starcher and others have started drilling on the Curtis and Ella May farm. In Sherman district, R. Fowler and others are spudding in for a second test on the Lafayette Stump farm. L. P. Bickel is drilling at 300 feet in No. 15 on the Martha Stump heirs farm.

In Gilmer County, Hope Construction & Refining Co. is down 1,040 feet in No. 3,569 on the Mary A. Stump farm in Center district. In this district, Mountain Iron & Supply Co. is drilling at 900 feet in No. 3 on the A. H. Stump farm.

In Roane County, on the waters of Big Sandy Creek, Frank Finley and others have completed a rig for a second test on the W. Hunter Smith farm in Geary district. It is 2.500 feet southeast of the South Penn Oil Co.'s No. 76 on the O. D. Stockley farm. United Fuel Gas Co. has a location and permit for No. 4,392 on the S. C. Ross farm, same district. In this district, Godfrey L. Cabot, Inc., has made a location for No. 3 on the G. W. Truman farm. In Curtis district, H. F. Parsons and others have a location on the M. B. Lattimer farm. Reedy Oil & Gas Co. has started drilling on the G. A. Knopp farm, Curtis district. In Smithfield district, United Fuel Gas Co. is drilling at 1,700 feet in No. 4,387 on the W. R. Wright farm. R. L. McCulty and others are building a rig on the O. M. Young farm. In Spencer district, Guy Boggess and others have reached 2,030 feet on the William Stine farm.

In Monongalia County, on Wades Run in Cass district, Hausch Glass Co. is building a rig on the Charles Barrickman farm in the gas area. In Marshall County, Manufacturers Light & Heat Co. is moving in the tools to start drilling No. 3,513 on the J. C. Clouster farm in Liberty district.

In Ritchie County, on Dutchmans Run in Murphy district, South Penn Oil Co. has rigged up for No. 14 on the Haught Lambert farm. In this district, Ira Roberts and others have started drilling on the W. T. Baker farm. King Knob Oil Co. is down 1,625 feet in No. 5 on the H. S. Hammond farm. In Union district, Robinson and Robinson have a permit on the H. M. Rymer farm. In Proctor district, Valley Run Oil & Gas Co. has a permit on the Monroe Lundy farm.

### SOUTHWEST PENNSYLVANIA

There were no completions in Southwest Pennsylvania during the week. In Indiana Township, Allegheny County, Chartiers Oil Co. drilled No. 10 on the W. J. Robinson farm to a depth of 2,350 feet, the Fifith sand, and it proved dry. In McCandless Township, E. A. Bream Co. has reached 1,600 feet in No. 4 on the Fred Backhaus farm. O. Miller has a rig standing on the J. W. McGready farm in this township.

In Beaver County, near Duff City, James Null is drilling on his own property at 1,725 feet.

In Amwell Township, Washington County, Carnegie Natural Gas Co. has made a location on the A. M. Cole farm about 750 feet northwest of the test on the C. W. Dunn farm. The same company has made a location on the C. W. Farrabee farm 1,230 feet northeast of the fair gas well on the Francis Meunzer farm. This company has rig on the ground on the N. B. Redd farm. Philadelphia Oil Co. has reached 1,773 feet on the Hulda Jenkins farm and has started drilling a second well on this farm. Union Gasoline & Oil Co. is building a rig for a second well on the Mary B. Lindley farm.

In East Findley Township, Washington County, Myers, Hoskinson and others are drilling at 1,100 feet in a second test on the J. N. Clutter farm. No. 1 is still making about 90 bbls. a day. Offsetting No. 1 about 50 feet over the line, Union Gasoline & Oil Co. has a rig standing for No. 3 on its lease of the J. N. Clutter farm. This company has made a location for No. 4 on this farm about 400 feet north and slightly west along the east boundary which will offset Myers. Hoskinson's No. 2. Levier and others have reached 1,919 feet on the James Marshall farm and are drilling in the Big Injun sand. Natural Gas Co. of West Virginia has reached 1,130 feet on the Leroy Ealy farm.

In Hanover Township, C. O. Inglefield and others have a rig standing for a second test on the D. P. Inglefield farm. In South Franklin Township, E. H. and J. B. Tague have rigged up for No. 10 on the Adaline D. McKennan estate.

In Greene County, Glass and Hagerson drilled deeper their No. 1 on the Jacob Raymer farm, 2 miles south of Majorsville in Richhill Township, to 1,518 feet. The Pittsburgh coal was at 285 feet. The Big Injun was struck at 1,452 feet with gas showing at 1,476-1,518 feet, which gauged at 220,000 feet a day. The well will be drilled deeper as soon as repairs are made. In Dunkard Township,


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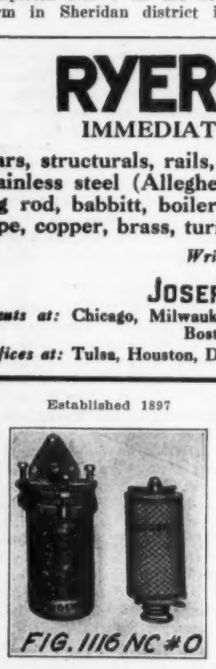

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3½ miles south of Mapleton, Fred Garrison is building a rig on the Henderson Coal Co. property.

In Fayette County, Carnegie Natural Gas Co. has made a location on the George M. Boyd farm in Jefferson Township, about 2¼ miles west of Star Junction.

## Gulf Coast Fields

(Continued from Page 135)

Steinberger Petroleum Co. is preparing to move in for No. 1 Weiss, 150 feet west of Parr's well. Steinberger Petroleum Co. has made a deal with Alpha Petroleum Co. to drill two wells on the five-acre tract.

Greer and Frazier's No. 1 O. Sternberg, north of Kountze in the H.&T.B. Survey No. 283, stuck about 3,500 feet of drill pipe when mud blew out while coming out of hole preparatory to start coring. Total depth is 6,242 feet. It topped the Vicksburg at 5,190 feet, had top of Hockley at 5,849 feet and encountered top of Heterostegina at 3,525 feet actual or 3,448 feet subsea. At Batson in Hardin County, Danciger Oil & Refining Co.'s No. 2 Hooks was still showing salt water after plugging back to 4,773 feet. It was showing 400 pounds pressure. It topped sand showing oil at 4,782 feet and bottomed hole at 4,795 feet and after a screen setting, flowed salt water with a small amount of oil.

### Austin County

Gem Oil Co. and Johnson's No. 1 Haedge in Block 18 of the San Felipe de Austin Survey in Austin County, has been abandoned as dry with total depth of 6,229 feet. It topped the Hockley at 4,852 feet and had top of the Cockfield at 5,756 feet actual or 5,575 feet subsea.

In the northwest corner of the county, Sun Oil Co.'s No. 1 Zetik, in the S. M. Williams Survey, was drilling at 1,055 feet in shale. In the north end of the S. F. Austin Survey, Baker and associates are reported to have taken an option on about 500 acres. About 3 miles east of New Ulm the Indian Territory Illuminating Oil Co. is reported taking leases in the Randolph Von Roeder Survey. About 3½ miles southeast of Sealy R. R. McDonald and associates are reported taking several tracts in Sections 177 and 164 of the H.&T.C. Survey.

### Raccoon Bend

Quite a bit of leasing has been in progress within the last two weeks around the flanks of the old Raccoon Bend Field in Austin and Waller Counties. This was all brought about by the recent discovery of Cockfield production in the area. Humble seems to be among the principal purchasers in the area and is reported to have recently taken Lots 38, 41, 42, 45, 46, 47, 53, 54, 55, 58 and 65 in the J. E. Grace Survey.

### Chambers County

About 1½ miles south of the Hankamer Field in Chambers County, Miramar Oil Co.'s No. 1 George Stengler was drilling at 5,400 feet. It had water sand at 5,368 feet. It was reported still in the Miocene at 5,200 feet.

### Brazoria County

At Manvel in Brazoria County, Burton Drilling Co.'s No. 1 Parker in the H.T.&B. Survey No. 63, has been abandoned as dry with total depth of 5,338 feet. On a drill stem test from 5,325-38 feet it showed 6 thribbles of mud and 15 fourbles of salt water in 15 minutes through one-quarter inch choke on top and bottom. Texas Co.'s No. 1 Boff in H.T.&B. Survey No. 74, was drilling sand at 6,433 feet with no show.

### Brazos County

North of Bryan and on the Kurten prospect in Brazos County, Marley Production Co.'s No. 1 H. Klintworth has resumed drilling and late in the week was going below 2,140 feet.

### Nacogdoches County

In Nacogdoches County, Dick Schwab's No. 1 Rambin, in the J. Simpson Survey, was plugging back to the Wolfe City at 3,689-3,725 feet and test. Total depth is 4,850 feet. It topped the Pecan Gap 3,045 feet, had base of Pecan 3,695 feet, topped the Austin chalk 4,018 feet and drilled base of Austin 4,165 feet actual or 3,799 feet subsea.

### Fayette County

Berry and Hays' No. 1 Otto Steinhauser, about 4 miles southwest of Muldoon in Fayette County, has been abandoned as dry with total depth of 2,265 feet in water sand.

### Matagorda County

At Buckeye in Matagorda County, United North & South Development Co.'s No. 1 Unit 4 had sand and shale showing oil at 7,871 feet and swabbed oil, gas and water. United North & South's No. 1 Unit 6 was circulating with stuck drill stem at 9,457 feet. This is the deepest drilling well on the Gulf Coast. South of Sheppards Mott, Texas Co. is reported to have taken around 550 acres in the J. Dwyer Survey.

### Refugio County

In the Bonnie View district of Refugio County, Heard-Holland Oil Co.'s No. 1 Peck, which has been creating much interest during the week, cored from 4,526-34 feet and late in the week was preparing to take another core before making a drill stem test. The core from 4,526-30 feet was hard sand rock, from 4,530-32 feet broken sand, and from 4,532-34 feet soft sand showing oil. On the north edge of the Greta Field, Humble Oil & Refining Co.'s No. 2 Welder was abandoned as dry with total depth of 6,000 feet in shale. About a quarter mile west of the field, Dash & Blanco's No. 1 J. M. O'Brien was completed for 600 bbls. daily at 4,396 feet. Floboots' No. 3-A J. F. Heard was completed for a 10,000,000-foot gasser.

### Wharton County

About 5 miles east of Wharton and near the Fort Bend County line, but in Wharton County, Humble is reported to have recently taken about 1,000 acres in the Elisha Moore Survey.

### SOUTH LOUISIANA

In Beauregard Parish the Federal Petroleum Co. has staked location for No. 1 Lutcher-Moore, 467 feet south and east of the NW cor. of Section 4-6s-12w, which will make three active wells along the Conroe trend in Beauregard Parish. During the recent months this parish has been getting a very active lease play and it is estimated that 85 to 90 per cent of the parish is under lease. The Federal company has a block of approximately 15,000 acres around the new location. Humble Oil & Refining Co.'s No. 1 Long-Bell, in the Dry Creek area and first major Conroe trend test for southern Louisiana, was drilling below 8,870 feet. F. W. Martin's No. 1 J. E. Cochran, in the western part of the parish and about 6 miles south of Merryville, was drilling 3,820 feet in sand with streaks of lime.

In the Gillis area of Calcasieu Parish, Union Sulphur Co. is moving in material for No. 2 Barbe Estate, about a mile south and a little east of No. 1, which is now standing with a fishing job at 8,125 feet. The new location is in the NE of the SE of Section 11-9s-8w and on the bank of the Calcasieu River. The Union Sulphur Co. has just finished reshooting the area.

Steinberger Petroleum Co. is preparing to stake location on its block of 5,000 acres centering around Section 24-10s-11w. The Pure has just finished shooting the block.

On the southern part of the structure of the Welch Dome in Jefferson Davis Parish, Tide Water Oil Co. was preparing to spur No. 1 Mrs. A. Bourgeois. This will be a 7,000-foot test of the Marginulina.

In St. Martin Parish, Continental Oil Co.'s No. 1 Standard of Kansas has been abandoned with total depth of 7,963 feet, where it had a bad fishing job. Operators will probably drill another test in the area.


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# Two New Wildcats Started in North Louisiana; Campaigns in Arkansas and Mississippi

By J. R. CRUMPTON
Staff Correspondent, Louisiana-Arkansas

SHREVEPORT, La., May 14.—A number of hot wildcats in this division are actively drilling, but none had reached the expected pay depths at the end of the week. Three tests in widely separated areas that recently encountered likely looking sands are either shut down curing titles or have drill stem or casing troubles. The general outlook points to an increased wildcatting campaign in three of the districts comprising this division, North Louisiana, South Arkansas and Mississippi. With the exception of a spot northeast of Carthage in Panola County and three different areas in Cass County, the fourth district comprising the border counties of East Texas is practically inactive.

### NORTH LOUISIANA

Two new wildcats on large blocks were reported in this district and a semiwildcat on the northeastern flank of the Sugar Creek gas field in Claiborne Parish will be closely watched, both as a possible extension of the gas area and for an oil bearing sand underlying the Oolitic lime from which the former is produced in the proven field. In Natchitoches Parish, Matthew Foreman, independent operator of Detroit, Mich., has derrick up on his No. 1 Poisset, Section 9-10-8w. The test is on a 5,200-acre block and the contract calls for a 2,500-foot hole, although it is understood the operator plans to drill to 3,200 feet if necessary.

C. T. Ruffin has assembled 4,500 acres centering around Section 18-14-14, DeSoto Parish, with a 60-day drilling contract attached. The Sugar Creek test will be drilled by the United Gas Public Service Co. in Section 32-20-5. The acreage and production in this field is owned jointly by this company, Standard Oil Co. of Louisiana and Triangle Drilling Co., the latter, discoverer of the field. Another wildcat in DeSoto Parish, R. E. Collins' No. 1 A. M. Thigpen, Section 29-15-12, was recently staked on a good sized block and has begun operations, setting 10-inch surface casing at 40 feet.

Only one other new operation was reported in this district, George L. Pace's No. 5 Greer, Section 32-8-11, in the proven area of the Zwolle Field, Sabine Parish.

Eastern Texas Oil Co.'s No. 1 First National Bank of Gibsland, Section 15-17-7, Bienville Parish, is making good progress, drilling at 2,250 feet. The top of the Nacatoch was logged at 2,067 feet. The company's geologist, Larry Bartell, is directing the operations on the test and the cores are being identified by the paleontological department of Magnolia Petroleum Co.'s Shreveport office. A deep test for oil in the Rodessa Field, Caddo Parish, R. W. Norton's No. 1 J. B. French, Section 34-23-16, has succeeded in removing tubing cemented into a short string of 4½-inch casing, and the casing will be recemented to test a sand at 6,717 feet.

A shallow test in Red River Parish, A. D. Mytilen's No. 1 Louisiana Delta Pecan Co., Section 27-13-11, set 7-inch casing at 766 feet, tested dry with a show of oil at 771 feet and had a good show of gas at 786 feet. The well is arranging to make further tests at 802 feet and at intervals below.

In Grant Parish, L. L. Lindsey's No. 1 Edenborn, Section 13-7-4, has drill stem stuck at 2,000 feet after encountering a reported oil sand from 2,330-42 feet. The total depth of the hole is 2,360 feet.

#### Six Completions

The North Louisiana district reported six completions during the week, three of which were dry holes, one gas well and two oil wells. The Converse-Zwolle area fell way below form with only one producer, Lula M. Layton's No. 2 Henderson, Section 29-9-13, flowing 50 bbls. daily from 1,661 feet. Although not officially completed, G. H. Collins' No. 3 Cranford, Section 20-9-13, Converse Field, has all the earmarks of being one of the best wells in this area. It blew in with an estimated 5,000,000 feet of gas and heavy spray of oil from 1,481 feet, but 6-inch casing set at 1,461 feet had a bad seat and had to be recemented. It is reported that when plug was drilled for the second time, the well blew in with an estimated 50 bbls. an hour through drill stem.

In the Sarepta area, Webster Parish, I. G. Abney Oil Co.'s No. 1-B B. L. Slack, Section 36-23-11, was completed pumping 50 bbls. daily from 2,736 feet. The gas well was in the Ouachita district of the Monroe Field. The Arkansas-Louisiana Pipe Line Co.'s No. 7 Rea-Green, Section 3-18-4e, gauged 2,350,000 feet of dry gas from 2,183 feet. Two of the dry holes were wildcats and one in the East Zwolle Field failed to hit a crevice in the chalk. Jensen-Mixon & Gutzler's No. 1 Ledbetter, Section 6-18-11, Bossier Parish, was abandoned as dry at 2,638 feet. The test is about 5 miles southwest of the old Bellevue shallow field. A shallow chalk rock test in DeSoto Parish, W. F. Flynn's No. 1 Nabors, Section 6-12-11, used acid in an attempt to make a well, but tested salt water and was abandoned at 1,283 feet. The Zwolle duster was the Service Drilling Co.'s No. 1 C. B. Byrd, Section 7-7-10, abandoned at 2,827 feet.

### MISSISSIPPI

This district has five active wildcats in as many counties and in addition there are several core tests being drilled in the southern part of the State together with extensive geophysical work in that area. In Amite County, Mineral Resources, Inc., is arranging to resume drilling on No. 1 Anderson, Section 14-3n-3e. This well was started by Magnolia State Oil & Gas Co. and was abandoned in July of last year at 460 feet after setting 12½-inch surface casing at 127 feet. E. R. Ratcliff and associates have taken over a large block of acreage in Franklin County and have spudded in a test in Section 20-5n-2e, setting 10-inch casing at 422 feet and drilling at 950 feet. United Gas Public Service Co.'s No. 1 Davis, Section 30-1n-5w, a deep test in Greene County, is temporarily shut down while a heavy engine is being moved in with the total depth at 5,960 feet. This wildcat is on a block of approximately 100,000 acres. A Pike County test, Bordie D. Finley's No. 1 Mechanic State Bank, Section 28-3n-7e, is drilling in rock at 3,650 feet. Beavy Corp.'s No. 1 R. J. Beavy, Section 33-2n-4e, Simpson County, has set 7-inch casing at 2,150 feet.

The Mississippi district reported one dry hole, a wildcat deep test in Rankin County. Benedum & Trees' No. 1 Southern Development Co., Section 35-3n-1e, was dry and abandoned in chalk at 6,451 feet.

### ARKANSAS

Wildcat acreage in the southwestern part of Arkansas in Miller and Lafayette Counties continued to get a play around tests that are drilling or soon to be drilled. E. L. Young, trustee's No. 1 Patterson, Section 5-19-28, the test that started the excitement a few weeks ago with a good core from 3,660-66 feet, continues shut down while titles are being cured on the block. J. K. Wadley's No. 1 Dickert, Section 24-17-27, in the Fouke area northeast of the Young well, topped the Nacatoch at 1,752 feet and is drilling at 2,650 feet. In Lafayette County, east of the Miller County Field, C. V. Lenzz's No. 1 L. A. Foster, Section 9-15-25, has set 10-inch surface at 203 feet and is drilling at 1,050 feet. Three tests in the Miller County Field have either contacted or are nearing the pay sand. Texarkana Oil Corp.'s No. 1 H. E. Beck, Section 34-15-26, has set 6-inch casing at 2,918 feet, with 2 feet of sand cut from a total depth of 2,923 feet.

### EAST TEXAS BORDER

Cass County has three tests in widely separated areas, one in the southwestern part, one in the northeastern area near Atlanta, and another just beginning on the eastern border near the Rodessa gas field in Caddo Parish. The latter is United Gas Public Service Co.'s No. 1 T. J. Walton, in the John Coleman Survey, about 900 feet west of the Louisiana-Texas line. Harrison County has one active wildcat and a few rigs are drilling around a small producing spot northeast of Carthage in Panola County. In the former, R. C. Payne and others' No. 1 Lowery, in the Spain Survey, is drilling at 3,750 feet.

## Wildcat Operations in Louisiana-Arkansas

**(Rotary operations unless otherwise designated)**

### North Louisiana

**AVOYELLES PARISH**

| Company, well, farm name, section and block— | Remarks: |
|---|---|
| Haas & Stokes' No. 1 Lindstrum Land Co., 690 ft. S, 980 ft. E. NW cor. Sec. 34-1n-6e | Set 12-in. 40 ft. |

**BIENVILLE PARISH**

| | |
|---|---|
| Eastern Texas Oil Co.'s No. 1 First Natl. Bank, 320 ft. N and E, SW cor. NE NE Sec. 15-17-7 | Set 10-in. 80 ft.; drlg. 1,660 ft. |

**BOSSIER PARISH**

| | |
|---|---|
| Bossier O. & G. Co.'s No. 1 Sherrill, 300 ft. S and W, NE cor. Sec. 13-9-12 | S.D.; W.O. 2,261 ft. |
| Force & Hanover's No. 1 Cryer, 330 ft. S and W, NE cor. NW SW Sec. 25-19-12 | S.D. 875 ft. |
| McKinney & Stewart's No. 1 Nattin, 470 ft. W, 620 ft. S, NE cor. Sec. 23-22-14 | S.D. 2,865 ft. |
| Producers O. & G. Co.'s No. 1 Werner, 660 ft. N and W, SE cor. Sec. 7-17-11 | Coring 2,915 ft. |

**CADDO PARISH**

| | |
|---|---|
| Ark.-La. P. L. Co.'s No. 1 Rodessa Land Co., 1,290 ft. N. 645 ft. W. SE cor. Sec. 23-23-16 | Drlg. 3,800 ft. |
| Ark.-La.-Tex. O. & G. Co.'s No. 1 Simon, 330 ft. N and E, SW cor. Sec. 15-20-15 | Arranging to set 6-in. 1,500 ft. |
| W. T. Bell et al's No. 1 Bostick, 1,320 ft. E, 660 ft. N, SW cor. Sec. 12-22-16 | Drlg. 1,045 ft. |
| W. O. Bliss' No. 1 McDade, 330 ft. N and E, SW cor. NW NW Sec. 2-20-15 | W.O.S.R. 1,640 ft. |
| Burkett O. & G. Co.'s No. 1 Lindholm, 400 ft. S and E, NW cor. NE SE Sec. 15-17-14 | S.D. 1,046 ft.; repairing rig. |
| A. D. King, tr.'s No. 1 Roach, 641 ft. E, 375 ft. N, SW cor. SE Sec. 4-14-16 | S.D. 2,128 ft. |

**CALDWELL PARISH**

| | |
|---|---|
| Terrell & Price's No. 1 La. Central Lbr. Co., 300 ft. N, 300 ft. W, SE cor. NW NE Sec. 18-11-3e | Coring 2,321 ft. |

**CATAHOULA PARISH**

| | |
|---|---|
| T. R. Hincey's No. 1 Millsaps, Sec. 33-9-4e | Rigging up. |

**CLAIBORNE—SUGAR CREEK**

| | |
|---|---|
| United Gas Public Service Co.'s No. 1, 1,390 ft. N, 2,890 ft. E, SW cor. Sec. 32-20-5 | Rigging up. |

**DE SOTO PARISH**

| | |
|---|---|
| L. H. Alderson's No. 1 Peek, SE cor. NW NE Sec. 25-11-13 | Set 8-in. 1,331 ft. |
| Berry Oil Co.'s No. 1 Wemple, Sec. 14-12-11 | Set 6-in. 2,604 ft.; T.D. 2,655 ft |
| R. E. Collins' No. 1 Thigpen, 515 ft. N, 970 ft. E, SW cor. NW NE Sec. 29-15-12 | Set 10-in. 40 ft. |
| Dempsey & Mansiel's No. 1 Thigpen, 375 ft. S, 330 ft W, NE cor. SW NE Sec. 33-13-13 | Coring 1,330 ft. |
| W. B. Flynn's No. 1 Nabors, 330 ft. N, 400 ft. W, C Sec. 6-12-11 | S.W. and abd. 1,283 ft. (corrected), |
| Gaskill et al's No. 2 Guy, 370 ft. S and W, NE cor. NW SE Sec. 3-11-13 | Set 10-in. 40 ft. |
| Hirschfield-Bailey's No. 1 Youngblood, Sec. 9-11-14 | Drlg. 440 ft. |
| Geo. M. LeGrand's No. 1 Fulmer, 200 ft. N and W, SE cor. NW SW Sec. 1-11-16 | Rigging up. |
| J. S. Tuffree's No. 1 McGill, 450 ft. N, 150 ft. W, SE cor. SW SE Sec. 1-10-13 | Set 8-in. 1,411 ft. |

**LINCOLN PARISH**

| | |
|---|---|
| Triangle Drlg. Co.'s No. 1 Colvin, 660 ft. E of C Sec. 31-20-3w | Coring 4,150 ft. |

**MOREHOUSE PARISH**

| | |
|---|---|
| James A. Noe's No. 1 Dalton, 3,445 ft. N, 805 ft. W of common cor. Sec. 41-21-5e | Set 12½-in. 164 ft. |

(Continued on Page 157)

#### Crude Oil Production

Estimated daily average production for the week ending May 12 follows:

**NORTH LOUISIANA**

| | |
|---|---|
| Caddo, light | 4,645 |
| Caddo, heavy | 1,570 |
| Converse | 1,345 |
| Cotton Valley | 570 |
| DeSoto and Red River | 1,535 |
| Elm Grove | 340 |
| Haynesville | 3,850 |
| Holly | 190 |
| Homer | 2,665 |
| Pleasant Hill | 215 |
| Sarepta-Carterville | 740 |
| Urania | 2,800 |
| Zwolle | 5,075 |
| Total | 25,540 |

**ARKANSAS**

| | |
|---|---|
| Champagnolle | 1,290 |
| El Dorado | 2,475 |
| Lisbon | 360 |
| Miller County | 895 |
| Nevada | 905 |
| Smackover, light | 2,340 |
| Smackover, heavy | 19,785 |
| Stephens | 610 |
| Urbana | 2,000 |
| Total | 30,660 |

# Increase of Drilling Likely in Lima Field; Report Eleven Completions in Indiana

By GEORGE A. WHITNEY
Staff Correspondent, Central West Fields

FINDLAY, Ohio, May 14.—There are prospects of an increase in drilling operations in the Lima Field, especially in Wyandot County. The latest completion was McPherson and others on the Catherine Smally farm, Section 3, Crane Township, reported better than an initial of 100 bbls. from the Trenton lime. It extends the Upper Sandusky Field 3 miles south and will mean more activity as most of the territory is under lease. At present the Wyandot area looks the most inviting so far as the Lima Field is concerned. Mifflin Oil & Gas Co. made a location on the Charles Rall, Jr., farm, Section 7, Crane Township. Jones and Coyle are drilling around 1,670 feet on the Harry Bardon farm, Section 5, same township, and are reported at 1,457 feet on the Edith Swerline farm, Section 21, same township.

The test being made by Craig and others on the Oscar Berg farm, Section 28, Tymochtee Township, Wyandot County, is at 1,395 feet, with 50 feet of oil in the hole and 760,000 feet of gas, after a shot. In the same township, Newcomer and others are drilling around 100 feet on the Ethel Bennett farm, Section 32.

In Hardin County, Huffman and others are drilling around 500 feet on the R. C. Baher farm, Section 9, Pleasants Township.

### CENTRAL OHIO

The Central Ohio Field remains the most active in the Central West, showing nine completions, two producers with an initial of 14 bbls., two dry holes and five gas wells. There are 17 rigs and 126 wells drilling, a total of 143, and locations have been made for 18 more almost ready to start.

#### Late Completions

In Medina County, Edson & Son's No. 45, on the E. G. Miller farm, Lot 13, Chatham Township, was dry at 446 feet. In Lorain County, Wittmer Oil & Gas Co.'s No. 1 Thomas Gammon farm, Lot 97, is a gas well. In Licking County, L. W. Rutledge, trustee's No. 2 Walter Hoyt farm, Section 17, Perry Township, produced 10 bbls. initial. Settles Oil Co.'s No. 2 on the Oren B. Evans farm, Section 2, Mary Ann Township, produced 4 bbls. from 570-79 feet.

In Muskingum County, Hopewell Oil & Gas Co.'s No. 2, on the W. L. Helriggle farm, Section 9, Brush Creek Township, is a gas well at 4,160 feet.

In Guernsey County, Robert Straker's No. 3, on the R. A. McBride farm, Section 5, Cambridge Township, is a gas well.

In Meigs County, Joe Rubin and others' test on the Elza Starr farm, Section 4, Rutland Township, is a light gas well at 956 feet, and Barton & Utsinger's No. 1, on the Donald D. Bryan farm, Section 8, same township, is a light gas well.

#### New Work Starting

In Lorain County, Ohio Fuel Gas Co. has a rig for No. 1 on the Arthur Carpenter farm, in Lot 85, Eaton Township. Same company is drilling No. 1 on the George Harris farm, Lot 61, Columbia Township.

In Holmes County, Ohio Oil Co. has a rig on the Amos H. Graven farm, Section 7, Prairie Township. In Knox County, Upham Gas Co. has a rig on the Cecil Stricker farm, Lot 14, Butler Township.

In Coshocton County, Preston Oil Co. has a rig for No. 1 on the Bertha E. Barrett farm, in Newcastle Township; and a rig for No. 2 A. J. and B. W. Beatty farm, and a location staked for No. 3 D. S. Snyder farm, all in the same township.

In Licking County, Wehrle Gas Co. is drilling No. 2 on the Thomas Smith farm, Section 1, Franklin Township, at 2,395 feet.

In Athens County, Ohio Fuel Gas Co. is drilling No. 8 on the Black Diamond Coal land, Section 23, Berne Township. Goddard & Blosser are drilling deeper No. 3 on the W. E. Henthorn farm, Section 17. C. & M. Oil & Gas Co. is drilling No. 4 Charles Cole farm, Section 35, Troy Township.

In Tuscarawas County, James Upham is drilling No. 1 Alfred Uhlers farm, Section 4, Fairfield Township, and Frey and others are drilling No. 6 on J. H. Eaver's farm, same section. Hopewell Oil & Gas Co. has a rig for No. 5 Stewart Asher farm, Lot 20, Washington Township.

In Stark County, East Ohio Gas Co. has started drilling No. 2 on the William J. Pontius farm, Section 16, Plain Township. Cunningham Natural Gas Co. has a rig in for No. 2, on the F. and A. Willaman farm, Section 17, same township.

In Guernsey County, Ferguson & McCullough are drilling No. 2 on the Fred R. Foraker farm, Section 20, Willis Township.

#### Nearing Pay

In Lorain County, E. R. Edson's No. 1 on the Suburban Realty Co.'s property, Lot 13, Sheffield Township, is below 4,200 feet. Columbus Mutual Life Insurance Co.'s farm, operated by McCarnless & Beal, in Lot 65, Eaton Township, is below 2,300 feet, and shut down for a string of casing. McMillen and others' No. 1, on the Merle Penfound farm, Lot 9, Carlisle Township, same county, struck gas pay from 3,263-36 feet, with 18,000 feet of gas natural and will be drilled deeper.

In Stark County, Wittmer Oil & Gas Co. is drilling close to 4,000 feet on the Violet M. Wise farm, Section 26, Lawrence Township. East Ohio Gas Co. is below 4,025 feet in No. 1 Frank C. Wise farm, Section 17, Plain Township. Same company's No. 1 John Fasnacht farm, Section 10, same township, is below 3,400 feet. Same company's No. 1 William Green farm, Section 20, same township, is below 2,800 feet. Brendel Producing Co.'s No. 2 Charles Warstler farm, Section 14, same township, is below 4,100 feet, and its No. 1 K. W. Donnenwirth farm, Section 22, is below 3,650 feet. Pfeiffer and others' No. 1 A. V. Pontius farm, Section 16, same township, is below 4,350 feet. Hoover Development Co.'s No. 1 Hoover farm, Section 8, is around 4,100 feet, and its No. 3 same farm, is below 4,350 feet. Lyons and others' No. 2 William and Anna Barr farm, Section 27, same township, is below 3,400 feet. H. W. Hoover's No. 1 M. D. Shanks farm, Section 20, same township, is below 3,500 feet. White and others' No. 1 J. M. Snyder farm, Section 23, Perry Township, is below 3,200 feet.

Kenova Oil & Gas Co.'s No. 3 Mary A. Beeler farm, Section 20, Hardy Township, Holmes County, is below 3,550 feet.

### INDIANA

Eleven completions were reported from the Indiana fields and indications are much work will be done over the State. There were three oil wells, with an initial of 105 bbls. production, six dry holes and two gas wells.

In Gibson County, Gem Oil Corp.'s No. 4, northeast corner of the Elza Harper farm, SE NE Section 8, Barton Township, was dry at a total depth of 360 feet. Knox Engineering Corp. is drilling No. 3 in the northwest corner of the Martha J. McCullough farm, SW NW Section 10, same township. Big Four Oil & Gas Co. is drilling No. 7 on the Catherine Sloan farm, SE SW Section 18, Washington Township.

In Sullivan County, H. J. Seiners' test

(Continued on Page 146)


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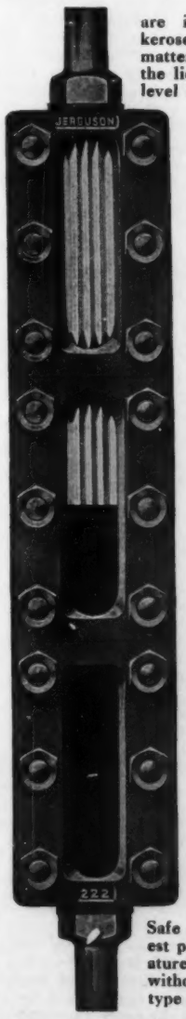


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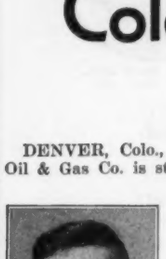
# Drilling Play Expected Around New Jal Well; Colorado Reports Best Completion in Years

By TOLBERT R. INGRAM
Staff Correspondent, Rocky Mountain Area

DENVER, Colo., May 14.—Stanolind Oil & Gas Co. is starting a well half a mile north of General Crude Oil Co.'s No. 1 Meyer, 4 miles north of the Jal Pool, in New Mexico, and a drilling campaign is expected around the new producer. No. 1 Meyer was completed for 225 bbls. in one hour. Two new locations were released in the Jal Pool. Grayburg Oil Co.'s No. 5 Burch, in the Maljamar area in Eddy County, flowed 506 bbls. initial, the best completion in that county in months. One new location was released in Valencia County and one small completion and one new location were reported in San Juan County.



The best well completed in Colorado in several years was Stanolind Oil & Gas Co.'s No. 32 Parkinson, on the Iles Dome, which made 230 bbls. in one hour. Continental Oil Co. is resuming drilling in Jackson County, where it brought in the famous "ice cream" wells on the North and South McCallum Domes. One new location, a wildcat, was made in the Hartsel district in Park County.

Two completions, one by Frannie Oil Co. for 100 bbls. and the other by Stanolind Oil & Gas Co. for 400 bbls., were reported on the Frannie Dome in Wyoming. Ohio Oil Co. completed a 25,000,000-foot gas well at Allen Lake, in Carbon County. The Midway Dome test pumped 157 bbls. of fluid, 80 per cent oil first 24 hours. One small well and one new location were reported in the Osage Field.

Five completions and five new locations were reported in the Cut Bank Field in Montana. One of the completions was Texas Co.'s No. 2 Yunck, which came in as a flowing well and made 150 bbls. natural first 24 hours.

Drilling in the State of Washington is showing a small increase.

## NEW MEXICO

### Lea County

The potential of the Hobbs Pool as of May 1, upon which allowable outlet of 35,542 bbls. daily for the first half of May is based, was 1,771,549 bbls., an increase of 51,730 bbls. daily compared with April 15 and 492,655 bbls. compared with January 1. The increases, with the exception of two wells completed, are mostly credited to new potentials established after the wells have been treated with acid. While only a comparatively few wells were treated in the last half of April, several of these jumped their potentials considerably. Continental Oil Co.'s No. 1 State, B-25, Section 25-18-37, increased from 4,539 bbls. daily to 17,075 bbls. Humble's No. 1-B Bowers, Section 29-18-38, went from 14,600 to 20,088 bbls. daily. One of the biggest gains so far recorded was in the Stanolind Oil & Gas Co.'s No. 8-Z Turner, Section 34-18-38, which went from 7,301 to 24,268 bbls.

Pipe line runs from the Jal Pool for April aggregated 71,455 bbls. The proration schedule for the first half of May allotted the 2,890 bbls. daily allowed the field to 22 units of 40 acres each and two additional wells were given special allowances amounting to the top of allowable of 222 bbls. each daily. Capacity production amounting to 1,466 bbls. daily was assigned to 16 units and the balance of 1,332 bbls. was divided equally among the six remaining units.

Pipe line runs in April from the Eunice Pool aggregated 58,643 bbls. The 2,100 bbls. daily allotted to this area was prorated among 12 units of 40 acres each. Capacity runs amounting to 250 bbls., was assigned to two units, and the balance of 1,850 bbls. was divided equally among the 10 remaining units. April pipe line runs from Hobbs Pool aggregated 1,093,256 bbls., bringing total since proration was established up to 44,077,170 bbls.

### Cooper Area

The bringing in of an oil producer in General Crude Oil Co.'s No. 1 Meyers, 4 miles north of the most northerly producer in the Jal Pool, is expected to result in considerable drilling activity in that area. The first new location was released this week in Stanolind Oil & Gas Co.'s No. 1 A. H. Meyers, C NE NE Section 22-24-36, half a mile north of General Crude Oil Co. well. Continental Oil Co. has the offset acreage on the north of this lease.

General Crude Oil Co.'s No. 1 Meyers, NE cor. SE Section 22-24-36, the oil discovery well in this district, is listed as a completion at 3,512 feet, total depth, in lime. Its initial production is based on the last one-hour gauge in which it flowed 225 bbls., or at the rate of 5,400 bbls. daily. The oil pay was found at 3,498-3,512 feet and the 7-inch was set at 3,498 feet. The 2½-inch tubing was run to 3,510 feet. The well is pinched in to its allowable of 202 bbls. Same company's No. 1 Cushing, SW SE NW Section 23-24-36, an old gas well being deepened from 3,205 feet to the new oil horizon, is bottomed at 3,225 feet in lime and is preparing to core.

### Jal Area

Two new locations were released in the Jal area in Continental Oil Co.'s No. 13-A No. 1 Sholes, C SW SE Section 13-25-36, which will spud with machine and then wait for rotary, and E. B. Guess and others' No. 2-B State, C SE SE Section 11-25-36, a west offset to their No. 1 Conditt.

Continental's No. 2-B Sholes-13, C NW NW Section 13-25-36, is bottomed in lime at 3,325 feet and waiting after setting the 7-inch at 3,295 feet with 400 sacks. A drill stem test at 3,265-95 feet showed for 2,648,000 feet of gas and another at 3,295-3,320 feet showed for 5,000,000 feet of gas and sprays of oil. Stanolind Oil & Gas Co.'s No. 29-B Farnsworth, C SW SW Section 7-26-37, is drilling at 2,960 feet in lime and tested 14,000,000 feet of dry gas at 2,840-2,940 feet. Repello Oil Co.'s No. 1 Stephens, SW cor. NE Section 13-25-36, is shut down for water at 500 feet. Texas Co.'s No. 2 Moberly, C NW SE Section 8-26-37, after testing on gas lift at 3,360 feet and making 139 bbls. of fluid, of which 87 per cent was basic sediment and water, in 24 hours, plugged back to 3,310 feet with 35 sacks, and is waiting. Barnsdall Oil Corp.'s No. 1 Forest, NE NW SW Section 24-25-36, was deepened to 3,331 feet, where it had a small show of sulphur water, and has plugged back to 3,325 feet with lead wool and will treat with acid.

### Lea Area

Texas Co.'s No. 1 Lea, SW cor. NW Section 14-20-34, 3 miles north of the nearest producer, is shut down at 3,560 feet waiting for pipe line connection. It has not been gauged, but estimates place the initial production at not less than 500 bbls. Same company's No. 2-B Lynch, C SE SW Section 27-20-34, after plugging back from 3,805 feet to 3,750 feet, is running tubing to treat with acid.

### Hobbs Pool

Shell Petroleum Corp.'s No. 2-B State, NE cor. NW Section 33-18-38, an outside well on the eastern side of the field, is rigging up rotary. Gypsy Oil Co.'s No. 8 West Grimes, NW SW NW Section 32-18-38, is preparing to skid rig to location. Noble Brothers' No. 2 Shell-State, E NE SW Section 24-18-37, is rigging up rotary.

### Eunice Area

Continental Oil Co.'s No. 8-A No. 1 A. E. Meyers, C NE SW Section 8-21-36, a west offset to Atlantic Oil Producing Co.'s No. 1-B State, is a near completion. It is running tubing at 3,830 feet, total depth. Tide Water Oil Co.'s No. 2 Coleman, C NW NE Section 17-21-36, is drilling at 2,197 feet in salt and anhydrite, and Atlantic Oil Producing Co.'s No. 2-B State, C NE SE Section 8-21-36, is shut down for water after setting the 15½-inch at 45 feet with 18 sacks.

### Eddy County

Grayburg Oil Co.'s No. 5 Burch, C SW NE Section 19-17-30, Maljamar area, proved to be the best well completed in Eddy County for some time, flowing 506 bbls. the first day from a total depth of 3,150 feet, in lime, and 465 bbls. the second day. When it blew in, the pressure knocked the top and bottom out of a 500-bbl. tank into which the oil was turned. Another connection half a mile away was made and the well was tested through a 2-inch flow line. It is an offset on the east to the same company's No. 4 Burch, which was completed a year ago at 3,125 feet for 292 bbls. initial.

### Valencia County

A new location near Grants, in Valencia County, is Gravity Petroleum Corp.'s No. 1 Jones, NE cor. NW Section 3-11n-9w. A cellar was reported dug and some material on the ground for a test by the same interests near this location late in 1932.

### Torrance County

Estancia Valley Carbon Dioxide Dev. Co.'s No. 1 Roland, NW SE SW Section 12-7n-7e, near Wilcox, is reported to have shown only a little carbon dioxide gas at 1,214 feet, to have entered a sand at 1,267 feet and to have encountered water at 1,300 feet. It may go deeper. The company has one gas well near this location and is planning to build a dry ice plant.

### Santa Fe County

C. C. Owens and others' No. 1 Cantwell, NW cor. Section 5-10n-9e, near Stanley, is reported to be drilling 220 feet in the red beds at 400 feet, but having trouble with water which was not entirely shut off with the 15½-inch at 220 feet. Water amounts to 4 to 5 bbls. per hour. Elmer Fisher's No. 1 Hill, Section 6-10n-7e, Barton district, is drilling at 1,700 feet.

### San Juan County

Continental Oil Co.'s No. 33, NE SW NE Section 2-29-19, Rattlesnake Field, was completed in the Dakota at 853-59 feet for 25 bbls. per day. Its No. 34, C SW SW Section 2-29-19, is rigging up machine.

Jack Amenda and others' No. 1, NE SW Section 25-30-12, Aztec district, is drilling at 750 feet and had a small show of oil at 740 feet. Aztec Oil Producers, Inc.'s No. 2, Section 28-30-11, is underreaming the 8¼-inch to bottom at 1,000 feet. R. C. Oswell's No. 5, NE SE NE Section 33-30-11, is drilling at 600 feet, and H. C. Stratton's No. 1 Grauel, SW NE SE Section 25-30-12, is drilling at 700 feet, with a show of gas followed by sulphur water.

## COLORADO

### Moffat County

The best completion in Colorado in several years is Stanolind Oil & Gas Co.'s No. 32 Parkinson, SW cor. Lot 6, NW Section 23-4n-92, on the Iles Dome, an offset to Texas Co.'s No. 5 Parkinson. It topped the Sundance at 3,327 feet and was drilled to 3,333 feet. The 8⅝-inch is at 3,331 feet. It flowed 230 bbls. the first hour, or at the rate of 5,520 bbls. per day. After the short test it was beaned down to 56 bbls. This was the only active operation in the field.

Mountain Fuel Supply Co.'s No. 3-B Florence Wilson, C SE SW Section 15-12-100, Hiawatha gas field, is coring at 2,545 feet in the Wasatch formation and showing considerable gas. It is below the first sand from which most of the wells are producing. Same company's No. 4-B Wilson, C NE NW Section 23-12-100, is standing waiting for tools from No. 3-B Wilson.

### Routt County

Texas Co.'s No. 5 Carstarphen, NW NE NW Section 5-6n-86, Tow Creek, is building rig. This location is in the north end of the north pool and will go to the shale pay.

### Jackson County

Continental Oil Co., which brought in one of the most famous wells in the country on the North McCallum Dome, near Walden, in Jackson County, in December, 1926, in its No. 1 Sherman, which made 30,000,000 feet of carbon dioxide gas and 500 bbls. of 49 degrees gravity oil, initial production, is resuming operations in that field. It has made a location for its No. 3 Government, NW NE Section 34-9n-78, on the South McCallum Dome. The discovery well on the north dome made oil and gas in the form of frozen slush and became known as the "ice cream" well. The new location is near its No. 1 Hoye, the discovery well on the south dome, which came in in 1927 and 4,875 feet in the first Dakota for 50,000,000 feet of carbon dioxide gas and a few barrels of oil testing 45.8 gravity. None of the wells drilled on the structures ever reached the lower Dakota sands where it is hoped oil without the carbon dioxide gas will be encountered. No drilling has taken place on Continental's acreage in several years and it will be interesting to watch this test as it will be drilled with knowledge gained in trying to control the other wells which presented unusual engineering problems.

Colorado Oil Refining Co.'s No. 1 North Park Coal, N WNW Section 18-9n-78, is drilling at 1,070 feet and will continue to 1,500 feet and then go back and test a show of oil at 550 feet.

### Park County

South Park Oil Co., which drilled its No. 1 Milligan, NE cor. SE Section 13-

8s-76, Jefferson district, to 3,228 feet, has made a location for another test 18 miles to the south in its No. 1 State, SW SE SE Section 16-11s-75, on the Hartsel anticline, 4 miles south of the town of Hartsel. The well was spotted by Petroleum Information, Inc. The first objective is a 75-foot sand in the Niobrara at 2,300 feet. The Dakota is expected at 3,200 feet and the base of the Morrison (top of the red beds) at 3,700 feet. The structure is a long narrow northwest - southeast - trending anticline upon which are a number of superimposed domes separated by shallow synclines or saddles.

South Park Oil & Gas Co.'s No. 1 Esche, SE cor. NW Section 5-9s-76, Como district, is trying to sidetrack tools and casing at 2,465 feet. There is no connection between the two companies.

**Fremont County**

John Milner and others' No. 1, SW SE SE Section 30-18-69, Florence district, is drilling at 2,600 feet, and Waterville Oil Co.'s No. 1 State, SE cor. NW Section 16-18-69, Phantom Canon, is shut down at 2,780 feet for pipe.

**Prowers County**

Trojan Oil & Gas Co.'s No. 1 Lotus Oil, NW NE NE Section 15-24-46, Lamar district, has pulled the 8¼-inch and is underreaming the 10-inch at 2,570 feet, total depth.

## WYOMING

**Park County**

Two completions were reported on the Frannie structure, in Park County. Frannie Oil Co.'s No. 2 Northern Pacific, SE SW SE Section 23-58-98, drilled by the Continental Oil Co., topped the Embar at 3,187 feet, the Tensleep at 3,249 feet and was drilled to 3,290 feet. The pay was at 3,213-90 feet. It has not been tested, but is estimated good for around 700 bbls. per day initial production. Tubing is being run. Stanolind Oil & Gas Co.'s No. 1 Rosenberg, NE SW NE Section 26-58-98, found the Embar at 3,215-69 feet and the Tensleep at 3,269-97 feet, the last named being the total depth. The formation showed saturation in streaks, while in the other well it was continuous. It has not yet been tested, but is estimated at 400 bbls.

**Carbon County**

Ohio Oil Co.'s No. 1 Kanawha, SW NW NE Section 34-23-79, a small gas well in the Morrison at 1,754 feet, was deepened to 2,167 feet and completed in the Sundance sand for 25,000,000 feet of gas per day. It topped the Sundance sand at 2,140 feet and was still in sand when drilling stopped.

Earl W. Reeder, Inc.'s No. 1 Union Pacific, C SW SW Section 19-20-83, Overland Dome, again is delayed and is pulling the 4¾-inch from bottom at 4,455 feet to recover lost bit. Producers & Refiners Corp.'s No. 4 Wertz, SW cor. SE Section 7-26-89, Wertz Dome, is drilling on iron at 2,826 feet, trying to straighten a crooked hole.

**Albany County**

Ohio Oil Co.'s No. 1 Chappell, C SE NW Section 28-21-76, near the town of Rock River, is rigged and ready to spud.

**Fremont County**

Kinney-Coastal Oil Co.'s No. 1 Chatterton-Weeks, C SW NE Section 22-3n-1w, Pilot Butte, which recently resumed at 3,680 feet to go to the Lakota, is cleaning out 15 feet off bottom.

The joint tribal council of the Arapahoe and Shoshone Indians at a meeting at Fort Washakie, in the Shoshone Indian Reservation, recently held a meeting at which they petitioned the Commissioner of Indian Affairs and the Secretary of the Interior to cancel the leases held by Continental Oil Co., the Stanolind Oil & Gas Co., Ohio Oil Co. and Texas Co. in the Maverick Springs Field. This field, a black oil area, has about 7,000 bbls. per day of production which has been shut in for a number of years. Last year an order was issued by the Secretary of the Interior requiring the companies to operate the field by September 1, or face cancellation. An agreement was reached whereby the operators agreed to pay increased rentals in lieu of producing the field. It is claimed that there is no market for the grade of oil on a profitable basis. The petition of the council, as far as known, has not yet been acted upon.

**Sweetwater County**

Mountain Fuel Supply Co.'s No. 2 Union Pacific, C SW SE Section 11-19-104, North Baxter Basin, cemented the 6⅝-inch at 3,194 feet and is waiting. The hole is on top of the objective Sundance gas sand.

**Big Horn County**

W. O. Taylor and others' No. 1 Hoskins, Lot 5, Section 25-56-97, Byron district, is shut down at 2,855 feet waiting for rotary rig, which is being moved from the Midway Dome. Sidney H. Keoughan recently signed a contract to complete the test to the Madison lime.

Garland Oil Co. has been incorporated in Wyoming and is preparing to drill 2 miles on the north end of the Garland structure. Contract has been let to Clyde Brannan, of Casper, who is preparing to move in equipment. The officers and directors of the new company are Henry R. Harriman, president; H. H. Underhill, vice president; L. A. Bowman, secretary; H. E. Harriman, treasurer.

**Hot Springs County**

California Exploration Co.'s No. 1, NE SE NE Section 12-33-97, Waugh structure, is drilling at 600 feet. It is headed for the Embar-Tensleep at 4,100 feet, with cable tools.

**Natrona County**

Midway Oil Corp.'s No. 1 Boyer, SW NE NE Section 23-35-78, Midway Dome, pumped 158 bbls. of fluid first 24 hours, of which 20 per cent was water, from a total depth of 5,190 feet. The oil is coming from the second Wall Creek. A string of tubing with packer may be run in an effort to shut off the water, believed to be coming from the first Wall Creek.

**Sheridan County**

Sheridan Syndicate's No. 1 Allison, SW SE Section 15-55-85, Beaver Creek, is drilling at 1,260 feet.

**Converse County**

E. B. Jones and others' No. 1 Pitman, C NE NW Section 27-32-69, Shawnee district, is drilling at 750 feet after lowering the 15½-inch to 520 feet.

**Weston County**

Chadron-Osage Oil Co.'s No. 24, SW NW SE Section 14-46-64, Osage Field, was completed for 25 bbls. per day on the pump from sand at 1,650-60 feet, after a shot. Same firm's No. 25, CNL SW SE Section 14-46-64, is moving in equipment. Carl Cundy's No. 8, SE NW NE Section 31-46-63, is ready to raise cement mast. Homestake-Osage Oil Co.'s No. 4, NW SE Section 13-46-64, cemented the 8¼-inch and is waiting. Albert Jones' No. 6 Bock, NW SE Section 21-46-63, is feeling for the top of the sand, and the West Osage Oil Co.'s No. 3, SE NE Section 15-46-64, topped the pay at 2,106 feet, and is drilling in, and C. L. Nichols' No. 4, SE cor. NW Section 8-46-63, is drilling at 190 feet with a show of 1 bbl. per day from the shale.

Williams Refining Co.'s No. 18 State, SW SE SE Section 36-46-63, Pedro Pool, was completed for 1 bbl. per day from shale at 160 to 260 feet.

## MONTANA

**Glacier County**

Five completions and five new locations were reported in the Cut Bank area. Texas Co.'s No. 2 Yunck, W SW SW Section 14-35-6w, was the best completion and came in as a flowing well. It made 150 bbls. natural the first 24 hours from a total depth of 2,874 feet. It was then shut in for nine hours and in the next 15 hours flowed 73 bbls. Texas Co.'s No. 2 Hinkle, W half, NW (near center) Section 2-34-6w, was completed at 2,868 feet with 1,800 feet of oil in the hole and is running tubing to test. Texas Co.'s No. 1 fee, Lot 7, Section 15-35-6w, had 2,350 feet of oil in the hole at a total depth of 2,907 feet and is preparing to test. Texas Co.'s No. 1 Antrim, center Lot 4, SE SE Section 27-35-6w, is standing completed at 2,939 feet, total depth, but has not been tested.

Dakota-Montana Oil Co.'s No. 1 Gilham, center Lot 4, NW NW Section 3-34-6w, swabbed 106 bbls. first 24 hours from pay at 2,907-33 feet, also the total depth.

The new locations follow: Montana Headlight Oil Co.'s No. 2 Yunck, C NW SW Section 1-34-6w; Texas Co.'s No. 3 Feet, 660 feet due south of C Section 15-36-6w; Texas Co.'s No. 1 J. B. Kearns, 560 feet from the north line and 420 feet from west line, Section 23-35-6w; Texas Co.'s No. 2 J. B. Kearns, 430 feet from west line and 660 feet from south line SW SW Section 23-35-6w; Alberta Pacific Consolidated Oil Co.'s No. 4 Matson, 660 feet from north line and 510 feet from west line SW NW Section 14-34-6w.

Dunstall and others' No. 1 Kennerly, S NE NW Section 22-34-6w, a mile west of the nearest producer, which pumped 92 bbls. first 24 hours, has declined steadily and is making 15 bbls. a day.

P. B. Anderson and others' No. 1 Anderson, SW cor. NW Section 26-35-6w, formerly carried as Bakke-Lund, is spudding at 160 feet, and Annand & Hutchings' No. 1 Bonnet, formerly Nadeau Brothers, is moving in materials. Lon Crumley's No. 2 Weaver, Lot 8, Section 27-35-6w, for which location was released last January, is rigging up. Indian Oil Co.'s No. 1 Clark, C SE SE Section 4-34-6w, is rigging up. Montana Headlight Oil Co.'s No. 2 Williams, C NE NE Section 11-34-6w, is sidetracking at 2,795 feet, total depth.

Montana Power Gas Co.'s No. 1 Neill, C NE Section 20-33-5w, is fishing for tools at 2,780 feet, and its No. 1 People's Unit, 800 feet east of C Section 14-33-5w, is drilling at 900 feet. Same com-

# Interesting Development Is Anticipated in the South Turner Valley Field Soon

By VICTOR LAURISTON
Staff Correspondent, Canadian Fields

CHATHAM, Ontario, May 12.—Total deliveries to the Calgary refineries from the Turner Valley Field in April amounted to 88,754 bbls., compared with 94,723 bbls. in March, which was the highest since June, 1931. The April total was considerably higher than any month of 1932 or 1933. Of the April deliveries, Imperial Oil Refineries took 84,324 bbls., including 9,888 bbls. of clear naphtha, 66,804 bbls. of discolored naphtha and 7,632 bbls. of light crude. March deliveries to the Imperial included 79,530 bbls. of naphtha, both grades, and 6,771 bbls. of light crude.

While no large increase is likely in May, with three wells drilling in the deep lime considerable new production may be expected later. Another factor likely to increase naphtha production is the projected construction of a second gasoline absorption plant on the Mercury lease in South Turner Valley, which will result in much greater naphtha recovery from the wet gas produced by a number of independent companies.

**Three Tests in Lime**

With three tests in the deep lime, some interesting developments may be anticipated within a few weeks in South Turner Valley. The farthest south is Highwood-Sarcee Oils' No. 1, LSD 16, Section 21-18-2w5, which got the lime at 5,352 feet and cemented at 5,360 feet, and is drilling out cement. The test had a fair commercial production of light crude in the brown sand of the Dalhousie and got the lime rather high on structure. If production is secured in the lime it will extend the field about half a mile southwest.

Farther north and east, Northwest Co.'s No. 1 Calgary and Edmonton-Longview, LSD 5, Section 27-18-2w5, is making new hole. It got the lime at 5,590 feet and cemented 6⅝-inch casing at 5,620 feet.

In Section 28-18-2w5, Pacalta Royalties' No. 1, LSD 7, entered the Madison lime at 5,045 feet, and is cementing 8-inch casing a short distance in the lime. It got the lime a little higher than Becker Syndicate's No. 2 Anaconda in LSD 15, a good producer.

In Section 28-18-2w5, southwest corner, Spooner Oils' No. 5 Anaconda, LSD 1, has a fishing job at 4,670 feet. Immediately west, Carleton Royalties' No. 1, LSD 2, has derrick up. Fay Becker and associates have a location in LSD 3, while in the southwest corner, Superior Mines' No. 1 Askalta has been spotted.

In the next tier of subdivision to the north, Richfield Royalties' No. 1, LSD 5, on the west side of the section, is making hole below 1,400 feet after installing new 5,000-foot cable. Immediately to the east, British Dominion Oil & Development Corp.'s No. 4, LSD 6, is drilling below 850 feet. The next test to the east is Pacalta Royalties' No. 1, LSD 7, now in the lime. Publix Oil & Gas Co.'s No. 1, LSD 8, on the eastern edge of the section, is drilling open hole in the Blairmore below 2,810 feet after carrying 13⅜-inch casing to 2,600 feet. It is planned to carry 10-inch hole to the Dalhousie sand, where light crude is anticipated.

Immediately to the north, on the east side of the section, LSD 9, is without a location. Next to the west, Mar Jon Oil Co.'s No. 2 Kindersley, LSD 10, is still testing production, with indications of a 40-bbl. naphtha producer in the lime. Mar Jon's No. 3 was spotted some time ago farther west, in S half LSD 11. LSD 12, to the extreme west, is untested.

In the northwest corner of the section, Turner Valley Royalties' No. 1 Bell & Brown, N half LSD 13, has spudded. To the east, Century Royalties' No. 1, LSD 14, rotary test is drilling below 3,850 feet after reducing to 5⅞-inch drill pipe, which will be used till the lime is reached. Sunburst-Mid Royal's No. 1, same LSD, is standing at 1,630 feet. Becker Syndicate's No. 2 Anaconda, LSD 16, in production, intervenes between this test and Director Royalties' No. 1, LSD 16, in the extreme NE cor. Section 28. Director's No. 1 is considerably below 3,850 feet.

**Far South Tests**

The newest center of interest is the Highwood-Sarcee area, Section 21-18-2w5. No. 1, now in the lime, is in LSD 16, the extreme northeast subdivision, and the new drilling extends to the south and west, with prospects of a number of new tests in the next few weeks. The southernmost test, Oliver Syndicate's No. 1, LSD 3, is reported spudding. Just west of Highwood-Sarcee's No. 1, Myers & Wright's No. 1, LSD 14, is rigging up and will spud in about May 15.

**Freehold Operations**

Shareholders of Freehold Oil Corp. ratified an agreement for the disposal of their quarter of LSD 8, Section 20-19-2w5, to the Royalite Oil Co. The company receives 2,000 shares of Royalite

(Continued on Page 153)

pany's No. 3 Seeba, SE cor. NW Section 2-34-6w, is drilling at 1,600 feet.

Nyhagen-Bell's No. 2 Anderson, NW cor. SW Section 26-35-6w, is drilling at 2,025 feet, and Nadeau Brothers' No. 2 Van de Mar, SW NW Section 35-35-6w, cemented the 6⅝-inch on bottom at 2,879 feet and are trying to stop leak. Par Oil Co.'s No. 3 Haines, SW cor. Section 2-34-6w, is rigging up. Producers Development Syndicate's No. 1 Eniarson, SW NW NW Section 29-32-4w, has cleaned up fishing job and is waiting for pipe at 2,679 feet.

Santa Rita Oil & Gas Co.'s No. 3 Cardwell, E SE NE Section 15-35-6w, is drilling at 2,680 feet, and its No. 1 Hardy, center Lot 5, Section 27-35-6w, is drilling at 2,640 feet.

R. C. Tarrant's No. 3 Britton, C NE SW Section 12-34-6w, is drilling at 2,680 feet, and his No. 1 Getty, C NE SE Section 2-34-6w, is drilling at 1,575 feet. Tarrant's No. 1 Jones, C SW SE Section 31-34-5w, is rigging up.

Texas Co.'s No. 2 Antrim, center Lot 1, Section 34-35-6w, is drilling at 2,827 feet and its No. 2 fee, Lot 8, Section 15-35-6w, is standing cemented at 550 feet. Same company's No. 3 Himkle, SW cor. NE Section 2-34-6w, is drilling at 530 feet, and its No. 1 Long, W NW SW Section 23-35-6w, is drilling at 2,585 feet. Texas Co.'s No. 1 Morrison, NE SE SE Section 22-35-6w, is moving in equipment, and its No. 1 Schlag, C SW SW Section 26-35-6w, is drilling at 835 feet.

### Carbon County

East Bridger Oil & Gas Co.'s No. 1, SE SE Section 23-6s-23, East Bridger district, is shut down at 400 feet, and Ohio Oil Co.'s No. 14 Maddox, C NW NW Section 10-7s-21, Dry Creek, is rebuilding derrick blown down by wind.

### Fergus County

H. Clark Rowland and others' No. 1 Woodward, SE cor. SW Section 20-14-24, Button Butte district, set the 6¼-inch at 2,695 feet for a water shutoff and is drilling at 2,700 feet.

### Hill County

Northwest Utilities Co.'s No. 1 State, C NW NE Section 16-32-17, Box Elder district, has installed a Fort Worth spudder and resumed at 590 feet.

### Phillips County

British-American Syndicate's No. 1 Hedges, S NW NE Section 17-32-33, Bowdoin gas field, is spudding at 50 feet.

### Liberty County

J. H. Hamilton and others' No. 1 Northern Farms, C NE SW Section 10-37-5e, Flat Coulee, which has been shut down at 300 feet for water, has completed 1½ miles of 2-inch water line and is ready to resume.

An operation not heretofore reported is Western Natural Gas Co.'s No. 2 Shaffer, C SE NE Section 23-38-4e, Whitlash district, drilling at 1,206 feet.

### Toole County

C. T. Oien's No. 1, NE SW SW Section 2-34-2w, Kevin-Sunburst Field, is drilling at 1,141 feet. Robertson Co.'s No. 1 Roberts, SW NE NW Section 24-33-3w, was dry and abandoned at 490 feet. Big West Oil Co.'s No. 1 Sorrell, C NW SE Section 7-34-3w, is drilling at 550 feet, and Vanderpas-Hepstad's No. 6 Helgerson, NW SE SW Section 28-35-1w, is drilling at 620 feet.

C. Leonard Smith and others' No. 1 McDonough, NW cor. Section 17-33-2e, Devon district, is spudding at 90 feet.

### Teton County

A new operation in the West Pondera district is Ned Cheedle and others' No. 1 Balsinger, NE SE NW Section 20-27-5w, to which California Co., which has a block of 5,000 acres, is reported contributing bottom hole money. Contract was let to B. E. Adams. The geology is by E. B. Emrick and Joseph Erwin.

## WASHINGTON

### Whatcom County

Considerable shallow drilling is reported in the Ferndale district where efforts are being made to determine the value of gas found at around 150 to 175 feet. The Bellingham Chamber of Commerce is reported to have been actively identified with the operation. Whatcom Natural Gas Co.'s No. 4 Lingbloom, SE NW Section 27-39-2, is reported to have a good show of gas at 160-175 feet, the gas having a rock pressure of 50 pounds. Van Bell Holding Co.'s No. 1 Betsinger, SW NW Section 26-39-2, has gas with water at 600 feet and is running packer to shut off water and test. Covey & Baus' No. 1 Hansen, NW NE Section 35-39-2, is drilling at a shallow depth in a 10-inch hole. A. W. Hunter and others' No. 2 Harden, Section 27-39-2, is drilling close to No. 1 Harden, completed last month for a small flow of gas.

### Chelan County

Northwest Oil Research Corp.'s No. 1-A Norco, SW Section 26-22-20, Wenatchee Heights, is drilling at 930 feet.

### Clallam County

Forks Prairie Oil Co.'s No. 1 Rosalie, Section 9-28-13w, Forks district, is shut down at 2,350 feet for pipe. It is reported that the Sun Oil Co. is to furnish a string of 7-inch casing and other materials for an interest.

### Jefferson County

Hoh River Oil Co. is reported drilling a series of core holes with diamond drill in the Hoh River district to work out the geology. Its No. 2 Gilkey, Section 12-26n-14w, suspended at 865 feet on account of bad hole. No. 1 Gilkey, on the same section, was suspended at 2,155 feet. Both had shows of oil. No. 1 was near No. 1 Sims of the Leslie Petroleum Co., which pumped 25 bbls. from sand at 768-90 feet several years ago and was reported to be the first discovery of oil in the State. The hole was drilled deeper and the oil could not be recovered.

## Central West Fields

(Continued from Page 143)

on the H. E. Williams farm, W half SW SE Section 18, Hamilton Township, is dry at 945 feet. Drillers & Producers, Inc., formerly Pierson, Yeager and others, is drilling on the Ellery D. Hayden farm, Section 18, Turman Township, same county. M. V. Yeager and others are drilling on the Link A. Norris farm, NW Section 8, Fairbanks Township.

In Pike County, Gem Oil Corp.'s test, 600 feet from the south line and 100 feet from the east line of the George A. Taylor farm, SW SW Section 9, Monroe Township, was dry at 361 feet. A. E. Davis and others' test on the Robert Elkins farm, NE Section 17, Washington Township, was dry in the Mississippi lime formation at 1,212 feet. Rendall & Stroble are drilling No. 3 on the J. A. and N. Carr farm, NW NW Section 14, Logan Township. Charles L. Divers and others' test on the Glendora Robling farm, SE SE Section 14, same township, is fishing at 900 feet.

In Spencer County, E. H. Bettinger is drilling No. 1 on the George F. Engelbrecht farm, NE SE Section 14, Harrison Township, in the southeast corner of the farm. Mose Alexander is reported drilling around 600 feet in No. 2 Linnie Lorch farm, SW Section 12, Hupp Township.

In Warrick County, W. C. McBride's test on the Emily Ricketts farm, Section 6, Hart Township, struck a showing of oil at 1,756 feet and at 1,758 feet went into water.

In Knox County, C. A. Thayer's test on the Stemmet and Aldridge farm, SE NW Section 8, Busseron Township, was dry at 808 feet, and his No. 2 on the Burton Yates farm, SE NE Section 8, same township, is a light gas well at 816 feet.

In Perry County, Bankable Oil Co.'s test on the Lee Adders farm, C NE SE Section 19, Clark Township, has a showing of both oil and gas in the Jackson sand, and will be completed later. In the same township, Anderson Creek Oil & Gas Co.'s No. 2, on the Jerome Cassidy farm, has been abandoned as dry at 506 feet. Same company is drilling No. 1 F. Delaissee farm, Section 30, Clark Township. Bankable Oil Co. is drilling on the Charles Shurtter farm, in Section 4, Troy Township. Charles E. Dice and others are drilling around 350 feet in No. 5 A. J. Peters farm, C NW Section 11, Anderson Township.

In Vanderburg County, Center Township, V. S. Hollingsworth is drilling No. 1 on the John and Mary Engermier farm, SE Section 24, and underreaming in an 8-inch hole at 800 feet. Foreman & Miller's No. 3 on the Katherine Builtman and others farm, SW NE Section 20, same township, is estimated good for an initial of 25 bbls., and No. 4, same farm, is reported for 30 bbls. initial at 1,031 feet. J. S. Young, Jr.'s test on the Ott Euler farm, Section 29, same township, is dry at 1,090 feet. A. P. Tallaferro's No. 4 on the P. L. and H. Neidhammer farm, NE Section 20, Center Township, is credited with an initial of 50 bbls. at 1,030 feet. Drake & Moffett's No. 6 is drilling on the John and Mary Effinger farm, SW Section 33, same township. In Scott Township, John H. McClurkin and others drilled to 950 feet without finding production and will drill deeper, in No. 1 on the Grant Rowland farm, SW NW Section 14.

Petroleum Exploration Co. and Ohio Oil Co. are drilling on the Floyd S. Young and others farm, NW Section 8, Benton Township, Monroe County.

## ILLINOIS

Little is being accomplished by the drill at this time in the Illinois Field, and no completions were reported. In Clark County, Price & Weger are drilling No. 1 on the H. Standfield farm, Section 36, Prairie Township, Crawford County.

In Westfield Township, Clark County, Eli Robinson is drilling No. 11 on the Drake heirs farm, NE Section 32. Jones and others have a rig on the C. A. Taylor farm, Section 2, Honey Creek Township.

## KENTUCKY

Total runs from wells served by the Illinois Pipe Line Co. in western Kentucky during April were 72,059.82 bbls.

Only one completion was reported from the Kentucky fields, Pottsville Oil & Gas Co.'s No. 2 on the Warren Wilson farm, in the Niagara Field, of Henderson County, with an initial of 15 bbls.

In the Mount Ariel Pool, in Allen County, Kentucky, Ben Ruble is drilling on the G. M. Welch farm, in the Scottsville area.

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# TECHNICAL QUESTIONS ANSWERED

By Charles K. Francis, Ph. D., Technical Editor

This department of The Oil and Gas Journal is devoted to the manufacturing branches of the oil industry.

Those connected with the refining of crude petroleum, the manufacture of natural gasoline and closely allied industries are invited to submit their problems to Dr. C. K. Francis, technical editor. The department was created for the purpose of aiding managers, superintendents, engineers, chemists and all those engaged in the various phases of plant operation; also those connected with marketing and utilization of petroleum products.

Questions should be submitted in as much detail as possible.

Inquiries must be signed but only the given initials will be printed. The source of the question is considered to be confidential

Questions requiring a discussion of patents, the use of intricate formulas, extended computations, or cost estimates cannot be considered.

When the matter is of general interest the reply will be published within a reasonable time.

## Spontaneous Fires and Explosions When Treating Light Oils

**Can you tell me what would cause a 58 gravity, 201° F. initial, 316° F. endpoint, naphtha to flash during treatment in a batch agitator?—R. J. S.**

While the properties shown are of general interest in the matter they are not so important as the flashpoint; which is probably very low.

There may be two possible causes responsible for agitator fires and explosions; the exact cause is not easy to determine. These are pyrophoric deposits and static electricity.

Pyrophoric deposits may form in the upper parts of an agitator, as the result of sulphur combining with iron, especially in corners, along angle irons, and pipe-bends. The sulphur may come from the oil or from the sulphur used in the treating. The sulphide is thought to have the composition $Fe_2S_3$, collecting in the form of a lump, covered with free sulphur. When this lump is broken, to expose the interior parts, the mass becomes red hot, igniting any oil that may be present.

It is an established fact that positive and negative forms of electricity will accumulate and if these are separated there will be built up finally a high enough potential to produce a spark when they jump, or come together, across a gap. Such accumulations or storage of electricity are called static.

Static electricity will form when a piece of amber, hard rubber or sealing wax, is rubbed with woolen cloth. Liquids, such as gasoline or caustic soda, moving through pipes, when agitated and stirred in a tank will store electricity and hold it for some time. The passing of silk and wool through naphtha and gasoline is recognized as dangerous because enough electricity may collect to produce a spark and ignite the vapors of the gasoline. Dry cleaners always provide against this hazard.

The precautions to be observed against agitator fire should include the installation of an automatic fire extinguisher. Pyrophoric deposits may be eliminated from agitators if they are washed down often enough to keep the iron work clean. Static is usually controlled by thorough bonding, and is always good practice if the agitator is separated, as it usually is from the ground by a concrete foundation.

The fact that agitator fires occur in most instances when fully charged suggests static as the most likely cause. If pyrophoric deposits were responsible, there would be more explosions; because there is not enough air present when the agitator is full and the introduction of a spark or flame when it was partially filled would no doubt result in an explosion of considerable force. Particles of the deposit would be liable to fall at any stage of the filling.

A definite reply to the question is impossible but this discussion may be of some use when considered with the local details.

For control of static and stray electric currents see The Oil and Gas Journal issues for 1934 as follows: January 25, page 34; February 1, page 28; March 1, page 33; May 3, page 27.

## Reputable Companies Distribute High Grade Gasoline

**About a year ago you answered a question as to what specification should be followed when purchasing gasoline, to the effect that it was more advisable for the average motorist to purchase from a reliable concern rather than to attempt to purchase according to specifications. I have particular need for a copy of this statement and would appreciate very much your furnishing me a copy if it is convenient for you to do so. If it is not, will you please answer the question for me?—F. A. S.**

I am sorry I cannot locate my discussion relating to the purchase of gasoline by the average motorist on the basis of an intrepretation of a set of specifications, which you state was published in the Journal about a year ago. All of my material is under index so if you can be more definite as to title, it would be no trouble to locate it. The subject is familiar and I probably wrote in substance that the average person can depend on a reliable company for superior quality in the gasoline, lubricating oils, and other petroleum products without knowing anything about the specifications.

The most reliable specifications for gasoline are those issued by the Federal Specifications Board and adopted by many of the states. However, the better known refiners, including your company, distribute gasolines that are superior to the product described in the federal specifications. There are several reasons for this. The larger companies employ an adequate corps of technically trained men and their refineries are equipped with apparatus that makes possible the separation and purification of the best grade of gasoline.

It is a fact that the scientific and technical men of the prominent refiners are members of the national societies, where the properties of petroleum products are studied, and these men serve as advisors to the Federal Specifications Board, in the preparation of specifications for gasoline and other products.

All of this work tends to put the larger refineries ahead of public specifications. They are naturally proud of their accomplishment, the refinery manager boasts that his plant makes a better gasoline than others, and they will continue to maintain their position by furnishing a product which is better than specification. In fact, the more important companies consider quality first and price second.

The ordinary person driving a car knows but little about gasoline with reference to knock rating, what controls starting qualities, acceleration, power and mileage. A lot of big words with little meaning to him, but he does know when he uses a quality product through the pleasant hum and smooth operation of the motor.

## Chemicals Used in Petroleum Refining—Ammonia

**This discussion of ammonia is part of a series of short articles about the chemicals used in petroleum refining. The first appeared on this page in the issue of March 15, 1934.—Editor.**

Ammonia and its compounds rank among the most useful chemical substances. There are two important sources: Coal and the atmosphere.

When coal is heated in ovens or retorts for the manufacture of coke or artificial illuminating gas, there are a number of substances, liquids, vapors and gases, produced. Among these are ammonia and several ammonium compounds. The water used for scrubbing the gas retains both ammonia and its compounds. This solution is introduced into a bubble plate tower connected to a still. Steam liberated in the tower drives off the ammonia from the solution and causes decomposition of certain of the compounds. When the liquid reaches the still it comes in contact with lime and ammonia is set free. The ammonia gas passing from the tower is absorbed in water, which will absorb over 700 times its volume at 60° F. This product is known as aqua ammonia, $NH_4OH$, containing about 28 per cent ammonia. The anhydrous ammonia, $NH_3$, may be made from this solution by heating the liquid in a still, passing the gas through a suitable drying medium, cooling and compressing to the liquid form.

The synthetic process is based on the extraction of nitrogen from the air, containing about 78 per cent. Until comparatively recently the source of nitrogen was the nitrate beds of Chile. Nitrogen is an essential plant food but the required quantity far exceeds that supplied by the nitrogen cycle of nature, so this element is returned to the soil in the form of fertilizers, 70 per cent of the nitrogen compounds being used for this purpose. Man can exist for some time without carbohydrates and fats but when proteins are excluded from his diet, starvation soon follows. The fact that about one-sixth of protein is nitrogen makes the methods for extracting nitrogen from the air of vast importance. These methods are called nitrogen fixation.

There are two processes for the fixation of nitrogen. One is to reduce the air to the liquid form by cooling under pressure and subjecting the liquid to fractional distillation. The other is to remove the oxygen by chemical methods and convert the residue, essentially nitrogen, to nitrogen compounds. When making ammonia the nitrogen is combined with hydrogen to form $NH_3$.

The liquid air process was the first to be put into large scale operation. It is based on the boiling point of nitrogen and oxygen, the two chief components of air. Nitrogen boils at —320° F. and oxygen at —297° F.; so there is enough difference to make a sharp separation, by the use of a bubble plate tower, into pure nitrogen and oxygen. The air is first freed from carbon dioxide, then compressed, cooled and expanded to produce a low temperature. The operation in the tower is to feed in the liquid near the top, then, flowing from plate to plate, it meets a rising stream of the cold nitrogen-oxygen mixture, and the nitrogen passes off from the top of the tower.

The chemical method is difficult and expensive because it requires the preparation of hydrogen. This may be done cheaply by the electrolytic method were low cost electricity available. Hydrogen is also obtained from flue gases, by decomposition of natural gas, water gas, and coke oven gas.

Whatever the source of the hydrogen, the two gases, hydrogen and nitrogen, are brought together in the proper proportions and passed into a converter, containing a catalyst. Pressures from 1,500 to 15,000 pounds per square inch are employed. The product is anhydrous ammonia, which may be converted to the aqua form by absorbing in water.

Ammonia is used in the refining of petroleum as a refrigerant; for neutralizing vapors from the stills that contain acids, and for treating special oils, such as stocks for medicinal oil.

Properties.—Anhydrous ammonia, formula $NH_3$; molecular weight 17.03; specific gravity 0.5971; melting point —107° F.; boiling point —28° F.; solubility in water at 32° F., 1049.6 parts in 1 part water and 727.2 parts at 59° F. An alkaline gaseous substance pungent odor and caustic; should be handled by an expert or person familiar with its properties.

Ammonium hydrate, or aqua ammonia, is sold in several grades, 16 to 28° Be., the technical grade containing 28 per cent $NH_3$. These grades may be obtained in bottles, 5-gallon carboys, 55 and 110-gallon drums, and tank cars. The properties vary with the grade. The technical 28 per cent solution has specific gravity 0.897 and boiling point about 100° F. An alkaline solution with pungent odor, must be handled with care.

Prices.—Anhydrous ammonia is shipped in cylinders containing 50 to 150 pounds at 16 cents a pound, and in tank cars at about 4.5 cents a pound. The delivered price in Mid-Continent territory is about 22 cents.

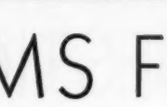
Aqua ammonia is sold, according to grade and container at 2.5 to 5.5 cents a pound. The liquid is shipped in bottles, 5-gallon carboys, 55 and 110-gallon drums, and tank cars.

The prices mentioned are approximate. Ammonia is commonly sold as delivered, any differences that may exist in the prices in the several states being due to freight rates.

XUM

# FIELD PROBLEMS FROM READERS

Edited by Thomas F. Smiley



**This department is conducted in order that men connected with the drilling, producing and transporting branches of the petroleum industry may obtain aid in solving problems that confront them in their work. Readers are invited to send questions freely. These questions will be placed in the hands of persons capable of answering them authoritatively, and the answers, based on the best available information, will be published.**

**Each question should give as much detail as possible, especially if it involves depth of sands, types of sands and operations on adjoining or nearby properties. The source of questions will be considered confidential, and only the initials of the sender will be published. Questions involving patented processes, intricate formulas or estimates of cost cannot be answered. If an immediate answer is important, one will be given by mail when the writer requests it.**

**In this connection, The Oil and Gas Journal will be glad to publish articles from field men who have devised new methods or improved old ones.**

## Introducing Exhaust Gases Into Sands Is Doubtful Procedure

**We are considering repressuring operations and we are informed that exhaust gases from our engines and compressors could be injected into the oil sands along with the air with beneficial results. Can you tell me whether this plan is a good one? Is it being practiced in other fields? Could it have any detrimental effect on the oil sands?—D. S. G.**

The method you outline has been tried, but apparently presented difficulties, for so far as information at hand goes it is no longer practiced.

There is one reaction that might occur if exhaust gas were introduced into the lines serving the wells and that is the formation of bicarbonate of lime from the mixing of carbon dioxide in the exhaust gas with water and this mixture dissolving lime. This lime might be redeposited as calcium carbonate or "gyp" and cause trouble in the formations and in the lead lines.

There is no large volume of gas used in the compression plant and if properly used in the cylinders of the units it has served its purpose and it is much simpler and safer to exhaust it to the air and avoid complications that might arise by trying to conserve to too great an extent.

If the heating effect of this exhaust gas is desired on the gas or air being used for repressuring it is possible to get good results by exhausting into a jacket surrounding the gas or air line that leads from the compressor to the well. In other words the heat contained in the exhaust gases can be used to warm the gas going into the formation without mixing it with this gas.

It is not difficult or expensive to surround the pipe between well and compressor with enough larger diameter pipe to permit the exhaust gas to be expelled to atmosphere practically devoid of heat. The larger pipe can be insulated on the outside to conserve the heat and permit it to heat the compressed air or gas as it goes to the well.

It is difficult to state without trial just how much of this heat will be carried to the face of the formation by the compressed gas or air, but there are no disadvantages to jacketing the pipe line and it is at least known that any heat contained in the exhaust from the engines has been transferred to the compressed air or gas at the surface and is therefore not entirely wasted.

## More Information Needed if Help Is to Be Given in This Case

**I want to ask a question in regard to flowing a small well. The well produces about 5 bbls. a day on the pump. We have been experimenting in an effort to flow it, but have met with no success. The oil string is of 6¼-inch pipe, with 2-inch tubing, and there is 400 feet of 4¾-inch liner. There is a gas sand at 3,220 feet, and the oil sand, 26 feet thick, is at 3,840 feet. The gas pressure is 750 pounds at the well head. The oil is 37 gravity. The tubing at present is set close to the bottom.—F. P.**

You do not say whether the 750 pounds pressure is shut in or flowing pressure nor do you tell the volume of gas produced, and this information is essential. Offhand it might be said that the string of tubing is out of proportion to the size of the well and it might be possible to flow it with a string of tapered tubing or by an intermittent flowing device if there is any appreciable volume of gas at suitable pressure to move the oil to the surface.

However, it is probable that by the time this type of equipment was installed and paid for the well would have to go on some form of mechanical lift and it might therefore be simplest and less costly to keep the well on the beam.

## No Uniform Practice Concerning Payment for Connecting Line

**In the laying of a pipe line connection, that is connecting the wells to the gathering line of a pipe line company, can you inform me who pays the cost of installing this connecting line? Is it the producer or the pipe line company?—F. R. S.**

The cost of providing material, labor and other items of expense in making connections between lease tanks and a pipe line gathering system is sometimes paid for by the producer and at other times by the pipe line company. Variations of these extremes cover the entire scale of percentages of sharing the expenses.

There is no set rule for such transactions and many factors enter into decisions. The positions of the lease and the existing pipe line system have much to do with deciding upon proportion of cost to be paid by the producer and pipe line company.

These are instances where the pipe line company has laid the line and the producer has furnished the material and later has been credited with this cost by the purchaser of the oil as accrued runs permitted accumulation of credits to be applied to paying the producer for the material furnished.

## Conditions Should Decide Which Recovery Method Is Better

**Is there some fairly clear and definite way of deciding whether the gas-lift or pumping is the better method of recovery for any given well? It looks to me as though a mistake in judgment on this point might be very expensive. My understanding is that there have been many improvements introduced in pumping equipment in recent years and I am wondering if these may not tend to outweigh some of the advantages accorded the gas lift when it was first introduced. I would be glad to have some information concerning the more modern machinery for pumping.—D. R. Y.**

Conditions must decide as between gas-lift and pumping operations for any given well or wells. As you yourself suggest, miscalculations may be costly.

Until recently the limitations of direct gas-lift caused pumping in many cases to be adopted in preference to the former system. Considerable experience with gas-lift installations, together with preliminary experimental work, is necessary in planning an efficient scheme for any given field. Miscalculation of volumes and pressures required is likely to result in high lifting costs. The lower initial cost of pumping equipment and the ease of installation, together with the fact that the operation is more familiar to oil field personnel, are points in favor of its adoption and it is less likely to be employed inefficiently than is the gas-lift. In fields producing heavy viscous oil, gas-lifting ratios and pressures are high, and pumping compares favorably, while emulsification is less in pumping than in gas-lift operations.

Where there is uncertainty as to the response of wells to gas-lifting, operators prefer to install pumping equipment rather than incur a larger initial outlay of capital.

In recent years important improvements have been made in the design of pumping equipment, both in all-enclosed geared central powers and individual pumping units. Much attention has been given to the problem of balancing, and the employment of dynamometers for plotting the stresses in jerk lines and sucker rods has resulted in much smoother operation of equipment. The strength of materials employed has been increased from a greater knowledge of the working stresses encountered.

Improvements have been effected as regards the straight line motion of the polish-rod assembly and efficient gearing to obtain a slow operating speed with a long stroke. On the other hand, pumping is at a disadvantage where the equipment has to operate in crooked holes, as the costs of maintenance of sucker rods, together with increased percentage of shutdown time, may become excessive. Sand troubles will cause wear on the pump parts and replacement costs will be increased. Experiments are being carried out with both gas-operated reciprocating pumps and gas-driven turbine pumps to eliminate the use of sucker rods. The use of gas in intermittent gas-lift on deeper wells is still far from highly efficient, and efforts are being made to utilize a larger percentage of the gas energy by more complete expansion of the gas in a bottom-hole pump either of the reciprocating or turbine type.

Pumping operation ordinarily employs either central pumping powers or individual units.

In the first system economy in operation is obtained by utilizing one power unit for several wells. It necessitates, however, fairly flat country and spacing of wells which will allow the system to be evenly balanced. The depth from which wells may be pumped is limited to 3,000-3,500 feet. Production rates from individual wells are controlled by altering the length of stroke, and using different size pumps and tubing to suit the required conditions.

Individual units may operate wells of any depth and give greater flexibility of control. Where electric power is available, operating costs may be considerably reduced. The stroke and the speed of the pump can be adjusted to give the best conditions for maximum efficiency. By increasing the stroke and reducing the speed, the volumetric efficiency of the pump is improved and the wear on moving parts reduced.

Analysis of pumping costs has shown that the horsepower required with a long stroke and slow speed is considerably less. The initial cost of equipment operating at higher speeds is, however, less expensive than equipment designed for lower speeds, and the most economical unit is one which pumps at neither extremely high nor low rates.

The application of electric power to pumping wells has made it possible easily to determine power consumption and costs. A wide range in the choice of pumping speed and stroke has resulted in greatly improved lifting efficiencies.

## Why Was It Called That?

TIRE

The tire, familiar pneumatic device which covers the wheels of motor vehicles, got its name from "attire" by aphesis (loss of a short unaccented vowel at the beginning of a word, as seen in "squire," shortened from "esquire"). In England the word is "tyre," and it was called that because it was an attire or covering for a wheel. Immense strides have been made in the manufacture of automobile tires. Thinking his old Winton car, built in 1898, would make a good exhibit at the Chicago fair in 1934, John F. Mullanay, Colorado Springs, Colo., wrote a manufacturer for prices on a new set of tires. The answer was $16,000, the maker explaining that it would have to install new equipment to turn out tires to fit this old model. Mr. Mullanay decided not to buy new tires.

# NATURAL GAS DEVELOPMENTS

## West Virginia Producers Forming Gas Organization

HUNTINGTON, W. Va., May 12.—Linking four counties in the fight of independent gas producers to conserve their interests and launching plans of statewide significance, organization of the Independent Gas Producers Association of West Virginia was effected at a meeting in Huntington and officers elected.

Russell Morris, of Huntington and Lincoln County, was elected president. Other officers are B. B. Jaynes, Lincoln County; J. W. Ramsey, Cabell County; B. J. Prichard, Wayne County, and G. C. Sowards, Putnam County, vice presidents; John Pridemore, Lincoln County; A. F. Morris, Lincoln County, and W. O. Dunham, Cabell County, directors; David Fox, Cabell County, secretary; J. H. Wilson, Cabell County, treasurer.

Preceding the organization meeting, held at offices of the Branchland Pipe & Supply Co., Inc., a mass meeting was held at Hamlin to vote on the proposal that Lincoln County interests affiliate with the organization launched in Cabell, Wayne, and Putnam Counties.

The meeting voted unanimously to unite Lincoln County with the other gas-producing counties in an independent' organization, and elected a committee to represent the county at the Huntington meeting.

Members of the Lincoln County committee included A. F. Morris, Freer Turley, B. B. Jaynes, Frank Adkins, John Pridemore, W. E. Pauley, Russell Morris, and R. H. Adkins.

The Huntington and Cabell County committee which met with the Lincoln countians included J. W. Ramsey, George W. Keller, O. E. Copeland, Dr. C. T. Taylor, C. J. Huffman, J. H. Wilson, and David Fox.

Purposes of the organization are to "promote the welfare of the independent natural gas producers" and membership is to include all independent natural gas producers, their employes, and all owners of land leased for the production of natural gas throughout the State, Mr. Fox, secretary, explained.

Officers of the organization emphasized that it is to be nonpartisan but that members plan to take an active interest in legislation and other public acts effecting the interests of independent gas producers. Statewide organization plans are to be launched at once. Officers plan to visit all gas-producing counties, contacting independent producers and assisting in organization efforts.

J. D. Smith served as chairman of the Lincoln County meeting. Those attending included W. C. Kingery, H. H. Baker, Mr. and Mrs. E. L. Baker, A. F. Morris, Lee Sanson, B. B. Jaynes, R. H. Adkins, J. L. Pridemore, Mr. and Mrs. R. F. Turley, Hal Dial, Jink Miller, Philip Hager, Mrs. Ida McComas, Dr. A. N. Henson, John H. Swanson, W. H. McMellon, F. M. Adkins, W. S. Smith, V. C. Smith, W. E. Pauley, F. L. Wysong, Alonzo Woodall, and H. R. Richardson.

### NEW CANADIAN GAS RATES

CHATHAM, Ontario, May 12.—Union Gas Co. of Canada has made an offer of lower gas rates to Chatham, Windsor and the Border Cities area. Under the proposed Chatham schedule, the rates for the first 5,000 feet per month remain unchanged. On the next 5,000 feet, the rate per 1,000 is cut from 65 cents to 60 cents; next 5,000 feet, from 60 cents to 45 cents; next 5,000 feet, from 55 cents to 45 cents, and all over 20,000 feet from 50 cents to 45 cents. Special discounts from October to April, inclusive, of 15 per cent on all bills up to $5 and of 10 per cent on bills between $5 and $10 will be allowed, with 10 per cent on all bills up to $5 the rest of the year.

The proposed new Windsor and Border Cities rates are 5 cents per 1,000 higher, with the same special discounts. The new rates become effective July 1.

## Dominion Company Wins Important Franchise Test

CHATHAM, Ontario, May 12.—The judicial committee of the Imperial Privy Council has dismissed the appeal of United Gas & Fuel Co., Ltd., of Hamilton, Ontario, from a decision of the Supreme Court of Ontario in favor of Dominion Natural Gas Co. in a dispute over the right to supply gas to the city of Hamilton.

The judgment is important as it practically defines the law throughout the British empire in reference to conflicting franchises where territory is annexed to a city. The Privy Council judgment holds the by-law of 1904 conferred upon the Dominion company a valid and perpetual franchise, not subject to repeal, which applied to the whole geographical area comprised at the time in the township of Barton. On annexation of portions of that area to the city of Hamilton, the franchise remained effective in and applicable to the annexed areas. The judgment also held that in these annexed areas the municipality of Hamilton after annexation took the place of the municipality of Barton as regards the rights and obligations established by the by-law and the franchise agreement. The contention of the United Gas & Fuel Co. that the exclusive franchise later secured from Hamilton automatically applied to exclude the Dominion company from the original Barton area was rejected. The Dominion company was awarded costs. The United Gas & Fuel Co. is a subsidiary of the Union Gas Co. of Canada, Ltd.

### COLUMBIAN CARBON

NEW YORK, May 12.—Directors of Columbian Carbon Co. declared a quarterly dividend of 75 cents on the voting trust certificates, lifting the annual basis to $3 from $2. In the previous quarter the company paid a quarterly dividend of 50 cents and a 25-cent extra. The preliminary estimate of first quarter earnings shows net profit of $588,000, equal to $1.03 a share, against $242,333, or 45 cents a share a year ago. The dividend is payable June 1 to holdings of record May 15.

### CANADIAN WESTERN GAS

CALGARY, Alberta, May 12.—Figures issued by the Canadian Western Natural Gas, Light, Heat & Power Co. of Calgary show that revenue from natural gas sales in 1933 amounted to $2,055,617 compared with $2,151,041 in 1932. Operating costs were reduced from $1,120,777 to $1,073,816, leaving net earnings for 1933 of $1,011,603. Some $4,490,629 debenture stock has been redeemed leaving the preference stock the senior stock of the company.

### CARDSTON GAS VENTURE

CARDSTON, Alberta, May 12.—Doctor Hinsey, geologist, of Salt Lake City, Utah, has associated himself with the Cardston Gas & Development Co., which is planning to develop gas production in southern Alberta to supply Cardston and adjacent communities.

## Flow of Gas Against Varying Back Pressures

Leonard Swing, Fellow at West Virginia University, reports the initial problem outlined for study by the American Gas Association Fellow at West Virginia University, a study of the flow of gas from wells in the eastern fields against varying back pressures. It was discovered necessary to make a comprehensive study of certain aspects of the flow of gas from porous reservoirs that have not yet received sufficient attention from petroleum engineers and geologists. An intensive study of the fundamental laws governing the release of gas from a porous reservoir, such as a gas sand, was undertaken. As the first step, a rigorous mathematical derivation of the laws of the release of gas from a porous reservoir was made, but unfortunately, a differential equation was obtained which is unsolvable for the boundary conditions that exist in a gas sand or in any model reservoir that can be set up in the laboratory. Luckily, an approximation solution for the very special case of a reservoir shaped like an infinitely long capillary tube was found. This solution, though in itself of no actual practical application to gas wells, does show the relation between the various factors influencing the release of gas from a sand.

With the solution of the case of a reservoir shaped like an infinitely long capillary tube as a guide, an experimental solution applicable to actual gas sands has been worked out in the laboratory. The laboratory work consisted of a series of experiments studying the release of gas from a specially constructed reservoir. These experiments were so arranged and carried out that the effectof different initial pressures, the effect of different back pressures against which the gas was released, the effect of size, porosity and permeability of the reservoir, and the effect of density and viscosity of the gas were carefully studied. The mathematical solution of the first special case showed that after the first rush of gas corresponding to the initial burst of gas from a new well had subsided, the ratio of the amount of pressure above the back pressure at any time to the amount of initial pressure above the back pressure was a function of the time of discharge, the size and porosity of the reservoir, and of the molecular weight, the viscosity and initial density of the gas.

This relation is in itself quite complicated, but fortunately, it was found that a series of curves could be constructed which would readily give the flow, at any given time, if the size and porosity of the reservoir, the initial pressure at which the gas was contained, the back pressure against which it is discharging, and the physical constants of molecular weight and viscosity of the gas are known.

At present, the results of the exhaustive investigation of the discharge of gas from a capillary reservoir are being applied in the study of the discharge from a sand reservoir such as is met in practice. As soon as this phase of the study is completed, the task of applying the experimental results to actual field conditions will be undertaken.

Parallel with this investigation, another investigation has been going on concerning the development of an electrical apparatus which will indicate and predict pressure distributions in a gas field after the initial or flush production has subsided. These investigations compliment each other and the results of one are directly applicable to the other. There remain a number of minor problems to investigate before the application of the "electrical analogy apparatus" so-called, to field conditions can be made. Every effort is being made to speed up the work to the limit of the facilities available.

## Studying Thermodynamics About a Regulator Valve

The committee on supply men's fund reports that the work of the Fellows at West Virginia University and the University of Oklahoma, is progressing. E. T. Harrison, Fellow at the University of Oklahoma, is studying the "Thermodynamics About a Regulator Valve." He has supplemented low temperatures with a salt-ice mixture packed around copper coils and has been able to reproduce freeze-up conditions. As soon as this condition occurs, the valve is removed and photograph taken of the ice formation. The data collected has shown definite results will be obtained concerning the heat transfer when gas passes through a throttling valve. The pressure drop across this valve has been varied from 6.25 pounds per square inch to 78 pounds per square inch. With each step of pressure drop the rate of flow has been varied over a wide range and the temperature of the inlet gas has been changed. The few runs made to date indicate the following conclusions:

The greater the volume passing, the greater the temperature drop will be.

The temperature of the air entering does not affect the amount of the temperature drop.

If the temperature of the valve goes below freezing, and if there is sufficient moisture in the air, the moisture will collect on the valve or valve seat, will freeze and interfere with the air flow.

If the air flow is small the ice will completely shut off the flow.

If the volume of air passing is sufficiently large the ice will collect on the valve and be blown off periodically causing a varying volume of flow and downstream pressure.

### ORIFICE METER SUBCOMMITTEE

The subcommittee on orifice meter coefficients has received a partial report from the Bureau of Standards which is being rechecked with the findings of the committee, as requested by the bureau. The bureau has advised that it would be some little time before it will complete the first check of this data and it will be necessary for the committee to recheck the findings and recommendations, so that it will be mid-summer before any final recommendations are ready for reporting to the main technical and research committee.

### CANADIAN GAS PRODUCTION

OTTAWA, Canada, May 12.—Official figures of the Dominion Bureau of Statistics show the natural gas output from all Canadian fields in March amounted to 2,598,738,000 feet against 2,697,423,000 feet in February and 2,497,762,000 feet in March, 1933. For the three months ending March 31, the output totaled 8,257,614,000 feet in 1934 compared with 8,270,209,000 feet in 1933.

Imports of mixed (natural and artificial) gas into Canada totaled 9,604,000 feet worth $6,628 in March compared with 9,598,000 feet worth $5,759 in February.

### GLEICHEN GAS PROJECT

GLEICHEN, Alberta, May 12.—The Gleichen board of trade is considering sponsoring drilling a test for gas to supply the town.

# PERSONAL PARAGRAPHS

E. M. (STUD) JOHNSON is now sales representative for the Bridgeport Machine Company in East Texas, with headquarters at Tyler.

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R. H. FORSYTHE has been assigned as an assistant to GUS SCHMIDT, geologist for the Tide Water Oil Company at Palestine, Tex.

* * *

A. H. LLOYD has been made scout for the Sinclair Prairie Oil Company in Tyler, Tex., having formerly scouted for the Prairie Oil & Gas Company in Oklahoma.

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V. H. WILHELM, the Texas Company, was the principal speaker at the recent meeting of the Los Angeles Basin Chapter of the American Petroleum Institute held in the Shell Oil Company recreation hall at Long Beach, Calif.

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ROBERT E. KING is now in charge of the Magnolia Petroleum Company's geological department, and M. D. SELF, of El Dorado, Ark., is in charge of the land work in the newly opened offices of the company at Midland, Tex.

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J. S. HUDNALL, consulting geologist and petroleum engineer of Tyler Tex., presented a paper entitled "Volume Changes in the East Texas Oil Field Due to the Compressibility of the Reservoir Rocks," before the Fort Worth Geological Society.

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ROY STANLEY and MRS. IMO PATTON have been chosen chairman and vice chairman, respectively, to make arrangements for the annual Sun Oil Company picnic in Dallas, Tex. J. EDGAR PEW, executive vice president of the company, is expected to attend as is his custom. This year's picnic is to be held at Glen Lakes Country Club.

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EMORY M. SKINNER, chief engineer for the Rock Island Refining Company, of Duncan, Okla., is spending several days in Tulsa.

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H. C. CAMP, general superintendent of refineries for the Empire Oil & Refining Company, spent several days at the company's Chicago plant in the past week.

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G. C. McCAUSLAND, of Newark, Ohio, production superintendent for the Leonard Oil & Gas Company in Ohio, visited the company's operations in Michigan last week.

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ROBERT W. ATHA, DECK STEWART, D. A. BURRIS, WALTER McCLANAHAN, and FRANK RAND, of Mount Pleasant, Mich., have returned from Louisville, Ky., where they saw the Derby.

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PAUL G. WEIDNER, Tulsa, head of the gas department of the Stanolind Oil & Gas Company, has returned after spending several days on an inspection trip of company gas properties in Wyoming.

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DRS. E. W. SHULER and EDWIN J. FOSCUE, of the geology class of Southern Methodist University, were in charge of a party of 176 students, on a tour of the Mineral Wells area of Central Texas.

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J. E. POLLOCK, of the Humble Oil & Refining Company at Baytown, Tex., is now a member of the American Petroleum Institute's committee on corrosion of refinery equipment. He succeeds DR. SHERMAN S. SHAFFER, resigned.

J. E. F. de KOK, managing director of the Royal Dutch Petroleum Company, has returned from an aerial tour of the Dutch East Indies administration.

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DR. E. R. REDGROVE, joint managing director of Snowdon, Sons & Company, Ltd., lubricating oil manufacturers, has returned from a business visit to Egypt.

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H. V. LAVINGTON, assistant general manager of the Trinidad Petroleum Development Company, Ltd., a subsidiary of British Controlled Oilfields. Ltd., has arrived in London, England on a vacation.

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E. B. FISH and E. W. PECK, second and third vice presidents, respectively, of the Wellington Oil Company of California, were re-elected to their offices at the annual meeting held in Los Angeles, Calif., recently.

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A. J. WILSON, who has for many years been associated with the technical sales organization of Russian Oil Products, Ltd., recently resigned his position and has joined the technical staff of Cities Service Oil Company, Ltd.

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K. R. KINGSBURY, president, and W. H. BERG, H. D. COLLIER, R. W. HANNA, OSCAR SUTRO, and J. A. MOFFETT, vice presidents of the Standard Oil Company of California, were re-elected at the annual election of the company held in San Francisco, Calif., recently.

* * *

FORD HUBBARD, combination scout and lease man for the Texas Company, Cisco, Tex., has resigned to take a similar position with the United Gas System at Houston, Tex. Mr. Hubbard and his family are now on a two weeks' visit at his home in New York before taking up his new work.

PAUL F. OSBORNE has moved from Denver, Colo., to Midland, Tex.

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A. G. OLIPHANT, president of the Bay Oil Corporation, Tulsa, is recovering from an attack and operation for appendicitis.

* * *

W. K. ESGEN, geologist with the Humble Oil & Refining Company, has been transferred from Houston, Tex., to San Antonio, Tex.

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PAUL M. BUTTERMORE, of Fort Worth, Tex., is now connected with the Chartiers Oil Company of Pittsburgh, Pa., as geologist and Mid-Continent representative.

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JOSEPH E. MORERO, who has been district geologist at Houston, Tex., for the Skelly Oil Company, has been made chief geologist with headquarters at Tulsa.

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G. E. MATT and S. M. WILLIAMS, JR., Tulsa, Associated Pipe Line Contractors of America, attended the hearings on the pipe line construction code at Washington, D. C., last week.

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JOHN JOSEPH RUPNIK, formerly in the geological department of the Texas Company, at Houston, Tex., is now computer in the geophysical division of the same company at Los Angeles, Calif.

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DR. U. B. BRAY, Union Oil Company; K. H. LOGAN, chief underground corrosion section of the U. S. Bureau of Standards, and DR. GORDON N. SCOTT, research associate of the American Petroleum Institute, were the principal speakers at a general conference of oil companies and public utilities representatives held in Los Angeles, Calif.

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GEORGE SCHEID has been appointed Central Michigan representative of the S. M. Jones Sucker Rod Company.

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J. I. BLANCHFIELD, statistician, has been elected assistant vice president of the Brooklyn Union Gas Company, Brooklyn, N. Y.

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ARTHUR B. RICHARDSON, of London, England, has been elected a director of Chesebrough Manufacturing Company, succeeding the late ROBERT A. CHESEBROUGH.

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HOWARD E. COLE, vice president of the Standard Oil Company of New York, Inc., and MRS. COLE, arrived in New York, Tuesday, May 15, from California on the Grace liner, Santa Paula.

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C. I. KELLY, M.Sc., F.I.C., assistant chief chemist of the Anglo-American Oil Company, is on a visit to the United States and Canada to study the latest developments in lubricating oil manufacture.

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T. E. WARD, export representative of a number of American companies, with headquarters in New York, will sail for Europe on the Majestic on May 25. He expects to return to this country at the end of July.

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ROBERT ROTH, geologist of Tulsa, is now connected with the Humble Oil & Refining Company's geological department in Wichita Falls, Tex., office. He succeeds VERN AUTRY who resigned and is with the Fain & McGaha Oil Corporation.

## DO YOU REMEMBER?

From The Oil and Gas Journal Files

### 25 Years Ago

May 19, 1909

Pennsylvania crude oil is selling for $1.68 and Oklahoma crude for 30 cents, and the market is weak.

Henry H. Rogers dies in New York, on May 19, age 69 years. He was chairman of the executive committee of the Standard Oil Co. of New Jersey. He directed the consolidation of copper companies into the Amalgamated Copper Co., and was a director in banks and several large railroad systems. Mr. Rogers entered the oil business at the age of 20, starting a refinery at McClintocks, between Oil City and Rouseville, Pa. He joined the Standard Oil Co. in 1874.

The Standard Oil Co. of Louisiana is preparing the ground for a big refinery at Baton Rouge. The company paid $5,000,000 for a 225-acre site just outside the city limits.

### 20 Years Ago

May 21, 1914

The Carter Oil Co. has abandoned its office in Tulsa. E. P. Salisbury, who has been in charge, has moved back to Titusville, Pa.

The average cost of drilling and completing a well in the North Texas Field is $1,500 for shallow wells (600 feet), and $6,000 for deep wells (1,750 to 2,000 feet).

Charles G. Kiskaddon, Tulsa oil operator, dies in the Tulsa Hotel aged 45 years.

Little Danny Tucker, a Negro boy, 10 years old, is receiving a royalty of $6,750 per month from the oil from his allotment in Sec-3-17-7, Cushing Field, Oklahoma.

### 10 Years Ago

May 15, 1924

Gypsy Oil Co. produced 3,023.775 bbls. in Oklahoma in the first quarter of 1924, leading all companies.

David F. Connolly has resigned as vice president and director of the Texas Co. to give all his time to his private interests, which include his oil field supply business, the D. F. Connolly Agency.

The Texas Co.'s No. 16 Koehler, in the Humble Field, Texas, completed in 1917, has produced 1,630,550 bbls. It was recently worked over and came back with a production of 5,400 bbls. per day.

I. W. Fuqua, president of the California Petroleum Corp., has resigned because of ill health, and R. L. Peeler has been promoted to the position vacated.

C. H. PHILLIPS, of New York, and MRS. PHILLIPS, are visiting Tulsa.

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W. R. COLVIN, of Tulsa, personnel director of the Stanolind Oil & Gas Company, returned from a trip to Wyoming.

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F. E. MURRELL, district representative in the Panhandle for the Texas Company, has been placed in complete charge of sales for that area.

* * *

A. M. HAGEY has been appointed local manager of the gas distributing system of the New York Oil Company at Rock Springs, Wyo., effective May 1.

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KENT S. WHITFORD, of Tulsa, of the legal department of the Stanolind Oil & Gas Company, spent several days in the Casper, Wyo., offices of the company last week.

* * *

C. J. MORRIS and W. H. MATKIN, of Waterton Park, Alberta, formerly drillers for the Alberta Gas & Fuel Company, have left for South Africa to work on core drilling near Johannesburg.

* * *

JAMES WEBB has returned to Petrolia, Ontario, on a three months' furlough from Negritos, Peru, where he is employed as a chemist in the International Petroleum Company refinery.

* * *

J. B. FOSTER, oil producer, has moved to Wichita, Kans., to take care of production in Barton, Ellsworth and Russell Counties. His office is in charge of H. R. CALDWELL, with FRANK MARSHALL as geologist.

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J. H. WOOD, of the Atlantic Pipe Line Company, Dallas, Tex., has been appointed member of the American Petroleum Institute division of production committee on fire prevention. Mr. Wood succeeds R. W. HOWE, of the same company, resigned.

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H. W. BELL, geologist with the Lion Refining Company, has been transferred from El Dorado, Ark., to Houston, Tex.

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JOSEPH H. MARKLEY, JR., geologist with the Texas Company, has been transferred from Wichita Falls, Tex., to Midland, Tex.

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RAYMOND H. PARKER, executive vice president of the Hartol Products Corporation, New York, is on a business trip to Mobile, Houston and Dallas.

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H. B. FIELDS, formerly with the geophysical division of the Texas Company, Houston, Tex., has been transferred to the geological department of the same company at Wichita, Kans.

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SAM GRINSFELDER, district geologist for the Union Oil Company of California, has been transferred to the company's main office at Los Angeles, Calif., from the Victoria, Tex., office.

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H. T. KLEIN, the Texas Company; A. E. WATTS, Sinclair Consolidated Oil Corporation; and A. W. PEAKE, Standard Oil Company (Indiana), were in Washington, D. C., in connection with the Subcommittee on Transportation.

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JOHN D. ROCKEFELLER expects to return to his home at Pocantico Hills from Florida late in June. Word has been received from JOHN D. ROCKEFELLER, JR., and MRS. ROCKEFELLER, who are in Europe, that they will return in time to be present at Mr. Rockefeller's ninety-fifth birthday celebration on July 8.

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W. C. TEAGLE and W. S. FARISH, president and chairman, respectively, of the Standard Oil Company (New Jersey), returned Saturday from a European trip. They said they had conferred with the company's associates in the Iraq Petroleum Company, but had been unable to reach an agreement regarding distribution of the Near East Company's production.

## Surely Entitled to Be Called Oil Man

A. C. (Ike) Jamison must be entitled to the designation "oil man," if anybody is, for he is a pioneer in the industry, having served continuously in the production departments of oil companies since he was a boy of 14. He is superintendent of production for the Arkansas Natural Gas Corporation, a subsidiary of Cities Service Company in the Louisiana and Arkansas districts, with headquarters in Shreveport, La.

A. C. JAMISON

Mr. Jamison was born in Clarion County, Pennsylvania, August 13, 1879, received his education in the public schools of Butler County, that State, and from 1893 until 1901, served his apprenticeship in the oil business in Butler County.

From Pennsylvania Mr. Jamison went to West Virginia with the South Penn Oil Company and was connected with the producing department of this company for 20 years. For five years he served first as cleanout man and then as driller. During the next 15 years he was production foreman in the Salem district.

At the time of the big Homer Field boom in North Louisiana in 1920, Mr. Jamison was made field superintendent in that area for the Arkansas Natural Gas Company, and for the next seven years he served in this capacity in the El Dorado, Ark., fields, the Haynesville Field, North Louisiana, and the Mexia Field in Texas. In 1928, he was made superintendent of drilling tools in Louisiana, Arkansas and Texas in all areas where his company operated, and the following year was named assistant superintendent of production under A. H. Weyland. Promotion to his present position came early in 1933.

Mr. Jamison has never found time for much recreation or for hobbies, but he says he may take up golf when he is old enough.

JOSEPH BAGGALEY, of the International Petroleum Corporation, left New York, May 12, on the Grace liner, Santa Barbara, for Peru.

* * *

J. H. BOVAIRD, Bradford, Pa., of Bovaird Supply Company and Bovaird & Company, has been a Tulsa visitor for the past week.

* * *

J. M. EVANS, Associated Oil Company, San Francisco, Calif., was in Washington, D. C., several days in connection with oil bids at the Navy Department.

* * *

FRANK C. HART, president of the Hartol Products Corporation, New York, sailed May 10 on a European trip. He will visit Paris, London, and other points.

* * *

T. W. KOCH, formerly with the Bakersfield, Calif., office of the Standard Oil Company of California, has recently been transferred to the California-Arabian Standard Oil Company, in northeastern Arabia.

* * *

CHARLES N. GOULD, Norman, Okla., director of the former Oklahoma Geological Survey, is writing a book on Oklahoma geologists and their work. He is planning a chapter on geological societies in Oklahoma.

* * *

RALPH G. BOWMAN, General Petroleum Corporation official, has announced that his resignation as a director and assistant sales manager of that organization, tendered last January, has been accepted to take effect upon the selection and appointment of his successor. Following several years of petroleum marketing as a sales executive of the Pure Oil Company in the East and Middle West, Mr. Bowman went to the Pacific Coast in 1924 to join General Petroleum in the organization of its marketing department. Accompanied by MRS. BOWMAN, he will leave the latter part of June for an extended business trip through Europe and the Orient.

CHARLES B. JOHNSON, Tulsa, has joined the sales force of the Drane Tank Company and opened offices in Tulsa.

* * *

D. F. McCARTY has rejoined the sales force of the International Derrick & Equipment Company with headquarters in Tulsa.

* * *

D. J. HANRAHAN, formerly with the Sterling Refining Company in Tulsa, has accepted a position with the Taubman Supply Company.

* * *

MR. and MRS. NOBLE WARD, of Trinidad, British West Indies, are spending a three months' furlough with relatives in Petrolia, Ontario, and vicinity.

* * *

C. FRAYER KIMBALL, at one time a scout in the Seminole district for the Prairie Oil & Gas Company, is now field man in the Midland, West Texas area, for Sinclair Prairie Oil Company.

* * *

J. S. (SAM) LEGGETT, of Waynesburg, Pa., former manager of the Prichard Supply Company, has been named sales manager of the Atha Supply Company, it was announced by W. HUNTER ATHA, JR.

* * *

MRS. JOHN T. BRAYBROOK has arrived in Petrolia, Ontario, for an extended visit from El Centro, Colombia, where she spent the past 18 months with MR. BRAYBROOK, who is employed with the Tropical Oil Company. Mr. Braybrook will join her in July.

* * *

WILLIAM L. AINSWORTH, head of the Kansas division of the Independent Petroleum Association; TOM JOHNSON, RALPH PRYOR, A. S. RITCHIE, all of Wichita, Kans., and CARL WEINER, Chanute, Kans., attended a meeting in Oklahoma City, Okla., last week to discuss the Federal petroleum bill.

* * *

WILLIAM B. CASE, Shell Petroleum Corporation, St. Louis, Mo., has been transferred to New York City.

* * *

VIRGIL E. BARNES, formerly of Galveston, Tex., is now junior topographic engineer with the U. S. Geological Survey.

* * *

GLENN D. ROBERTSON, geologist with Shell Petroleum Corporation, has been transferred from Buffalo, Tex., to Iowa, La.

* * *

W. F. MOORE, vice president of the Gasoline Products Company, New York, is now on a business trip to Port Arthur, Tex., and other southwestern points.

* * *

EVERETT C. EDWARDS has taken a position as geologist with the General Petroleum Corporation at Bakersfield, Calif. He received the degree of Ph.D. from the California Institute of Technology at Pasadena last June.

* * *

CLIFFORD E. PAIGE, vice president of the Brooklyn Union Gas Company, has accepted an invitation to address the second International Gas Conference at Zurich, Switzerland, September 1-4, on the subject of "Developments From Co-ordinated Research and Co-ordinated Rate Making."

* * *

R. B. ROAPER, safety engineer for the Humble Oil & Refining Company, Houston, Tex., was the principal speaker, and A. J. MULLER, of the same company, Longview, Tex., served as toastmaster at the eighth annual safety convention and banquet given by the company in Palestine, Tex., on May 11. Company men from the Mexia, Jacksonville and East Texas district attended. Mr. Roaper's talk was on the "New Deal in Safety." Other speakers were: H. S. McGARRY of Overton, H. S. WARNER of Houston, W. P. JONES of Jacksonville, LEROY WILKE of Overton, BUSTER ARNIM of Houston, W. A. HUGG of Mexia, and W. E. HILL of Houston.

XUM

# MARKET RECORD OF OIL SECURITIES

## Active Oil Stocks Listed on New York Stock Exchange

**Compiled by Carl H. Pforzheimer Co., 25 Broad Street, New York City, Members New York Stock Exchange and New York Curb Exchange**

| 1934 High | 1934 Low | Week ended May 12 Sales | High | Low | Close | Stocks— | Total shares outstanding | Par value | Dividend rate | Payable or last paid | 1933 High | 1933 Low | 1932 High | 1932 Low | 1931 High | 1931 Low |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 53¾ | 41½ | 4,700 | 51¼ | 48 | 48 | Amerada Corp. | 774,875 | N.P. | 50cQ | 4-30-34 | 47⅝ | 18½ | 22¾ | 12 | 23 | 11¼ |
| 35¼ | 23⅜ | 18,900 | 26½ | 23⅜ | 23⅜ | Atlantic Refining | 2,673,834 | $25 | 25cQ | 6-15-34 | 32½ | 12⅝ | 21⅞ | 8⅝ | 23⅝ | 8⅝ |
| 10 | 7½ | 26,400 | 8⅜ | 7¼ | 7⅜ | Barnsdall Corp. | 2,186,385 | $5 | .... | 5-11-31 | 11 | 3 | 7 | 3⅜ | 14½ | 4 |
| 19¼ | 11⅛ | 49,100 | 13 | 11½ | 11⅝ | Columbia Gas & Elec. | 11,610,036 | N.P. | 12½cQ† | 5-15-34 | 28⅛ | 9 | 21 | 4¼ | 45⅝ | 11⅝ |
| 14¾ | 9½ | 68,200 | 11½ | 9½ | 9⅝ | Consolidated Oil Corp. | 14,218,835 | N.P. | 28c | 4- 7-34 | 15¾ | 5 | 9 | 4 | 15⅞ | 4⅛ |
| 22⅜ | 16½ | 45,000 | 20 | 17⅝ | 18 | Continental Oil of Delaware | 4,738,593 | $5 | 25c | 4-30-34 | 19⅝ | 4⅞ | 9⅜ | 3⅝ | 12 | 5 |
| 22¼ | 15⅛ | 13,100 | 20 | 16½ | 16⅞ | General Asphalt | 387,149 | $10 | .... | 6-15-32 | 27 | 4⅝ | 15½ | 4⅜ | 47 | 9⅝ |
| 5⅜ | 3¼ | 10,400 | 4⅜ | 3¼ | 3¾ | Houston Oil (new) | 1,098,618 | $25 | .... | 10-17-30 | 7⅜ | 1⅞ | 5⅜ | 1⅛ | 14⅛ | 3 |
| 3⅝ | 1⅜ | 1,500 | 2⅛ | 2 | 2 | Louisiana Oil Refining | 1,302,158 | N.P. | .... | ..... | 4 | ⅝ | 2¼ | ½ | 4½ | 1 |
| 14⅜ | 11⅝ | 11,700 | 12⅜ | 11⅜ | 11½ | Mid-Continent Petroleum | 1,857,912 | N.P. | 25c | 5-15-34 | 16 | 3¾ | 8⅞ | 3¾ | 16⅜ | 5 |
| 20¾ | 11½ | 3,500 | 17 | 14 | 15 | National Supply of Delaware | 382,591 | $25 | .... | 5-15-31 | 28⅝ | 4 | 13 | 3½ | 70¼ | 5 |
| 15⅞ | 10⅝ | 39,500 | 12⅝ | 10⅝ | 10⅝ | Ohio Oil Co. | 6,563,107 | N.P. | 15c | 6-15-34 | 17⅝ | 4¾ | 11 | 5 | 19½ | 5⅛ |
| 8⅝ | 6½ | 2,000 | 9⅜ | 7 | 7 | Pacific Western Oil | 1,000,000 | N.P. | 25c‡ | 10-25-33 | 9½ | 3 | 8 | 3 | 15 | 2⅞ |
| 2½ | 1¼ | 1,200 | 1⅝ | 1⅜ | 1⅜ | Panhandle P. & R. | 198,770 | N.P. | .... | ..... | 4¼ | ⅜ | 1¼ | ¼ | 4¼ | ⅝ |
| 20¾ | 15⅛ | 32,200 | 18½ | 16⅜ | 16½ | Phillips Petroleum | 4,155,113 | N.P. | 25c | 5-14-34 | 18¾ | 4¾ | 8⅛ | 2 | 16⅝ | 4 |
| 16¾ | 10¼ | 3,700 | 12⅝ | 10¼ | 10¾ | Plymouth Oil Co. | 990,261 | $5 | 25cQ | 3-31-34 | 17⅝ | 6¾ | 12½ | 6 | 19 | 6 |
| 14⅞ | 9⅜ | 24,000 | 11⅛ | 9⅜ | 9½ | Pure Oil | 3,038,370 | N.P. | .... | 9- 1-30 | 15⅜ | 2½ | 6½ | 2⅞ | 11⅞ | 3¼ |
| 39⅛ | 33 | 1,000 | 35⅛ | 34⅜ | 34⅝ | Royal Dutch N. Y. shares | 432,224 | $14 | $1.07½ | 8-14-33 | 39¾ | 17⅝ | 23¾ | 12⅛ | 42⅝ | 13 |
| 38⅜ | 25⅜ | 15,800 | 34⅛ | 29¾ | 32⅝ | Seaboard Oil of Delaware | 1,204,460 | N.P. | 15cQ§ | 3-15-34 | 43⅜ | 15 | 20⅜ | 6⅝ | 20¾ | 5½ |
| 11⅞ | 7⅝ | 13,200 | 9⅜ | 8¼ | 8¼ | Shell Union Oil | 13,070,625 | N.P. | .... | 6-30-30 | 11⅝ | 4 | 8¾ | 2½ | 10¼ | 2½ |
| 89 | 58 | 1,000 | 75⅛ | 70½ | 72 | Shell Union Oil pfd. | 400,000 | $100 | .... | 7- 1-31 | 61 | 28½ | 65¼ | 18 | 78 | 15 |
| 11¼ | 9 | 3,500 | 9¾ | 9⅛ | 9⅛ | Simms Petroleum | 461,000 | $10 | 25c | 1-17-34 | 12⅜ | 4⅞ | 7½ | 3¼ | 11 | 3½ |
| 11½ | 7⅞ | 3,100 | 10⅛ | 9⅜ | 9⅜ | Skelly Oil | 1,008,514 | $25 | .... | 12-15-30 | 9⅞ | 3 | 5¾ | 2½ | 12⅞ | 2 |
| 19⅞ | 14⅝ | 61,300 | 16 | 14⅝ | 14⅝ | Socony-Vacuum | 31,019,694 | $25 | 15cQ | 6-15-34 | 17 | 6 | 12¼ | 5¼ | 21 | 8⅜ |
| 42⅞ | 31½ | 20,400 | 33¾ | 31½ | 31⅝ | Standard Oil of California | 13,102,900 | N.P. | 25cQ | 12-15-33 | 45 | 19½ | 31⅞ | 15⅛ | 51¾ | 23½ |
| 41 | 33⅞ | 700 | 39¾ | 39¼ | 39⅝ | Standard Oil of Kansas | 200,000 | $10 | 50cQ | 7-31-34 | 39⅞ | 12¾ | 16½ | 7 | 19 | 7¾ |
| 50⅛ | 41⅝ | 42,700 | 44¼ | 41⅝ | 41¾ | Standard Oil of New Jersey | 25,740,965 | $25 | 50cSA | 6-15-34 | 47½ | 22¾ | 37⅜ | 19⅞ | 52½ | 26 |
| 62 | 51½ | 700 | 57½ | 56½ | 57⅛ | Sun Oil | 1,591,110 | N.P. | 25cQ | 6-15-34 | 59 | 35 | 39⅞ | 24⅜ | 45¼ | 26¾ |
| 29⅜ | 22½ | 20,100 | 25¼ | 22½ | 22⅝ | Texas Corp. | 9,486,417 | $25 | 25cQ | 4- 1-34 | 30⅛ | 10⅜ | 18¼ | 9¼ | 36¼ | 9⅞ |
| 6½ | 3⅛ | 8,900 | 4¼ | 3¾ | 3¾ | Texas Pacific Coal & Oil | 880,703 | $10 | .... | 12-31-29 | 6½ | 1⅝ | 4 | 1½ | 6½ | 1⅞ |
| 14¼ | 8½ | 27,100 | 13 | 11¾ | 11¾ | Tide Water Associated | 5,613,800 | N.P. | .... | 2-16-31 | 11¾ | 3½ | 5⅝ | 2 | 9 | 2⅛ |
| 84⅜ | 64½ | 1,600 | 84½ | 79¼ | 79¼ | Tide Water Associated pfd. | 666,524 | $100 | $1.50Q | 4- 1-34 | 65¼ | 23½ | 60 | 20 | 68 | 20½ |
| 20½ | 15⅛ | 8,400 | 16⅞ | 15⅛ | 15⅛ | Union Oil of California | 4,386,070 | $25 | 25cQ | 5-10-34 | 23⅜ | 8½ | 15⅜ | 8 | 26⅝ | 11 |
| 21 | 15⅝ | 1,600 | 19½ | 18 | 18¼ | Union Tank Car | 1,200,000 | N.P. | 30cQ | 6- 1-34 | 22⅜ | 10½ | 19¼ | 11¾ | 25⅛ | 16 |
| 5¾ | 3½ | 5,500 | 4 | 3½ | 3⅝ | Wilcox Oil & Gas | 424,839 | $5 | .... | 5-10-28 | 5½ | 2 | 8¾ | 2¾ | 9⅜ | 2¾ |

*Ex-dividend. †Payable in 5 per cent convertible preferred stock. ‡Initial dividend. §Plus extras.

## Active Oil Stocks Listed on New York Curb

**Compiled by Carl H. Pforzheimer Co., 25 Broad Street, New York City, Members New York Stock Exchange and New York Curb Exchange**

| 1934 High | 1934 Low | Week ended May 12 Sales | High | Low | Close | Stocks— | Total shares outstanding | Par value | Dividend rate | Payable or last paid | 1933 High | 1933 Low | 1932 High | 1932 Low | 1931 High | 1931 Low |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 38 | 31¾ | 100 | 35½ | 35¼ | 35½ | Buckeye Pipe Line Co. | 200,000 | $50 | 75cQ | 6-15-34 | 39¾ | 25 | 35 | 17½ | 56 | 30 |
| 5½ | 2¾ | 14,100 | 3¾ | 2¾ | 3⅜ | Carib Syndicate | 579,000 | 25c | .... | ..... | 7⅝ | ¼ | ⅝ | ¼ | 2⅜ | ¼ |
| 126½ | 115 | 300 | 124 | 116 | 116 | Chesebrough Mfg. Co. | 120,000 | $25 | $1Q† | 3-30-34 | 129 | 71 | 90 | 53 | 129½ | 75 |
| 4¼ | 1⅜ | 32,200 | 2⅞ | 2½ | 2⅝ | Cities Service | 37,804,394 | N.P. | .... | 6- 1-32 | 6¼ | 1½ | 6⅞ | 1¼ | 20¾ | 5 |
| 3¼ | 1¼ | 3,200 | 2¼ | 2 | 2⅛ | Colon Oil | 2,200,000 | N.P. | .... | ..... | 4 | ¼ | 1¼ | ¼ | 3⅛ | ¼ |
| 3⅞ | 1⅝ | 700 | 2¾ | 2⅛ | 2¼ | Cosden Oil | 399,687 | $1 | .... | ..... | 3⅞ | 1⅜ | 2⅞ | ¼ | 3¾ | ⅜ |
| 13⅜ | 9⅝ | 39,800 | 12⅝ | 12 | 12 | Creole Petroleum | 6,974,356 | $5 | .... | ..... | 12 | 4¾ | 3⅛ | 1¾ | 3⅞ | 1⅝ |
| 7½ | 4⅜ | 400 | 6 | 5¾ | 5¾ | Darby Petroleum | 509,696 | $5 | 25c | 2-15-34 | 8 | 2⅛ | 7⅛ | 1⅝ | 2½ | 1⅝ |
| 2¼ | 1⅝ | 100 | 1¾ | 1¾ | 1¾ | Derby Oil & Refining | 263,162 | N.P. | .... | ..... | 2¾ | ⅞ | 3 | 1 | 6 | 1½ |
| 36 | 31 | 200 | 35¼ | 35¼ | 35¼ | Eureka Pipe Line | 50,000 | $100 | $1Q | 5- 1-34 | 41¾ | 20 | 35 | 18 | 36 | 19 |
| 76⅜ | 58½ | 7,200 | 63 | 57⅞ | 60 | Gulf Oil Corp. | 4,538,101 | $25 | .... | 10- 1-31 | 62 | 24 | 44¾ | 23 | 75½ | 25⅝ |
| 46⅜ | 33½ | 9,900 | 43 | 40⅛ | 41 | Humble Oil & Refining (new) | 8,923,935 | N.P. | 25cQ | 4- 1-34 | 105½ | 40 | 55 | 35⅝ | 72 | 44½ |
| 15⅛ | 12⅝ | 13,200 | 15 | 13⅜ | 13⅜ | Imperial Oil of Canada | 26,857,152 | N.P. | 25cSA†‡ | 6- 1-34 | 15⅞ | 6½ | 10⅞ | 6¼ | 18¼ | 7⅝ |
| 6⅞ | 3⅞ | 500 | 5½ | 5¼ | 5¼ | Indiana Pipe Line | 300,000 | $10 | 15cSA | 5-15-34 | 8 | 3⅛ | 7½ | 2¾ | 21⅛ | 5½ |
| 27⅜ | 19⅜ | 19,400 | 27¼ | 26 | 26¼ | International Petroleum | 14,247,088 | N.P. | 56cSA†‡ | 6- 1-34 | 23½ | 8⅞ | 12¼ | 8 | 15½ | 7⅜ |
| 3¾ | 2¼ | 5,100 | 3⅛ | 2⅞ | 3 | Louisiana Land & Exp. | 3,000,000 | N.P. | .... | ..... | 2¼ | 1/16 | 2½ | ½ | 2 | ½ |
| 5⅞ | 4 | 100 | 4¾ | 4¾ | 4¾ | Lion Oil Refining | 270,000 | N.P. | .... | 10-27-30 | 9½ | 1¼ | 3½ | ⅞ | 6¾ | 1½ |
| 8¾ | 4¾ | 3,600 | 6¾ | 5½ | 6 | Lone Star Gas | 5,382,723 | N.P. | 16cQ§ | 3-31-34 | 11⅞ | 4¾ | 11 | 3⅜ | 29 | 5½ |
| 5½ | 4 | 1,500 | 5 | 4¾ | 5 | Mountain Producers | 1,682,182 | $10 | 15cQ | 4- 2-34 | 6½ | 2½ | 4¾ | 2⅛ | 5⅞ | 2 |
| 18⅛ | 14 | 1,500 | 16 | 14¾ | 14¾ | National Fuel Gas | 3,810,183 | N.P. | 25cQ | 4-16-34 | 20 | 10 | 14⅝ | 8 | 26½ | 9¾ |
| 9½ | 8 | 1,100 | 8⅝ | 8¼ | 8¼ | National Transit | 509,000 | $12.50 | 40cSA | 6-15-34 | 10 | 5½ | 10½ | 6 | 17½ | 5 |
| 2¼ | 1¾ | 400 | 1⅞ | 1⅞ | 1⅞ | New Bradford Oil | 1,445,202 | $5 | 10c | 3-15-34 | 2⅛ | ½ | ⅞ | ⅛ | 1½ | ½ |
| 2¾ | 1 | 1,400 | 1⅜ | 1⅛ | 1⅛ | New Mexico and Arizona | 1,000,000 | $1 | .... | ..... | 1⅞ | ½ | 1¼ | ⅜ | 3 | ¾ |
| 4¾ | 3 | No sales .. | .. | .. | .. | New York Transit | 100,000 | $5 | 15cSA | 4-14-34 | 4⅞ | 3 | 9¾ | 7½ | 14½ | 5⅞ |
| 7 | 4⅝ | No sales .. | .. | .. | .. | Northern Pipe Line | 120,000 | $10 | 25cSA | 1- 2-34 | 6⅛ | 4¼ | 5½ | 3⅛ | 35½ | 20 |
| 2⅝ | ⅞ | 4,900 | 1⅞ | 1⅜ | 1⅜ | Pantepec Oil | 1,608,700 | N.P. | .... | ..... | 3⅜ | ⅛ | ⅝ | 1/16 | 2 | ⅜ |
| 3⅛ | 1¾ | 1,000 | 2 | 1⅞ | 1⅞ | Ryan Consolidated | 296,931 | N.P. | .... | ..... | 4¼ | ⅝ | 2⅛ | ⅝ | 3 | ¾ |
| 7⅞ | 5¾ | 2,000 | 6¾ | 6¼ | 6½ | Salt Creek Producers | 1,496,859 | $10 | 20cQ | 5- 1-34 | 9¼ | 3½ | 5½ | 2⅞ | 7⅝ | 2¾ |
| 24⅜ | 17½ | 1,700 | 23¼ | 20½ | 20½ | South Penn Oil | 1,200,000 | $25 | 30cQ | 3-31-34 | 22¼ | 11 | 16½ | 9⅝ | 23⅞ | 9¼ |
| 4¾ | 4 | 400 | 4⅜ | 4⅛ | 4⅜ | Southern Pipe Line | 100,000 | $10 | 10cSA | 3- 1-34 | 6 | 2⅛ | 10 | 3¾ | 17 | 7 |
| 47 | 41 | 100 | 46 | 46 | 46 | Southwest Penna. Pipe Lines | 35,000 | $50 | $1Q | 4- 2-34 | 43 | 24½ | 37 | 27 | 42½ | 25 |
| 32¾ | 25 | 21,200 | 26⅝ | 25⅞ | 25⅞ | Standard Oil of Indiana | 15,941,894 | $25 | 25cQ | 6-15-34 | 34 | 17 | 25⅛ | 13⅛ | 38½ | 13½ |
| 17⅝ | 14⅝ | 3,300 | 16 | 15½ | 15½ | Standard Oil of Kentucky | 2,606,983 | $10 | 25cQ | 3-15-34 | 19¼ | 8⅝ | 15⅞ | 8⅞ | 23⅝ | 12⅛ |
| 16⅝ | 13½ | 400 | 14 | 14 | 14 | Standard Oil of Nebraska | 190,822 | $25 | 25cQ | 6-20-34 | 20½ | 11 | 19 | 10¼ | 36½ | 16 |
| 27½ | 18½ | 500 | 19½ | 18½ | 18½ | Standard Oil of Ohio | 753,740 | $25 | .... | 1- 3-33 | 41 | 15½ | 30⅛ | 15½ | 62½ | 23 |
| 2 | 1/16 | 1,900 | 1½ | 1¼ | 1⅜ | Sunray Oil | 1,162,840 | $5 | .... | 4-15-31 | 1½ | ¼ | ⅝ | ⅛ | 5¼ | ¼ |
| 11 | 5 | 2,400 | 6⅛ | 5 | 5 | Texon Oil & Land | 936,028 | N.P. | 15c | 3-31-34 | 13¾ | 6¼ | 10½ | 4½ | 12⅞ | 2½ |

*Ex-dividend. †Plus extras. ‡Payable in Canadian funds. §Payable in preferred stock.

Note—In comparing highs and lows for the several years in the two tables, it will be necessary to take into consideration cases where there have been stock split-ups.

# Curtailed Mid-Continent Runs Should Strengthen Market

(Continued from Page 28)

worth & Chandler. The Eagle Refining Co. has been taken over by the Crow Refining Co., the plant formerly operating as the East Texas Refined Products Co. is now the Kilgore Reclamation Co., the Gladetex Refining Co. is now the Good Refining Co., the Johnsonville Refining Co. is now the S. & E. Refining Co. and the Keystone Refining Co. is now operated as Texas Refining Co. No. 2. The O. K. Refining Co. has changed its name to the L. & M. Refining Co., and the Owl Refining Co. is now the Artex Refining Co. New names appearing on the list are the L. & G. Refining Co. which has a 500 bbl. skimming unit at Gladewater and the Star Creek Refining Co. which operates a 2,000 bbl. plant at Kilgore.

Refinery crude runs in the East Texas Field have been reduced from 90,270 daily during April to 66,560 bbls. daily this month, a reduction of 23,000 bbls.

### Other Areas

The only other material change in the operations of plants by areas is the increase shown in the Kansas group. Here the schedules have been increased to 99,830 bbls. per day from 87,350 in April, an increase of 12,480. Oklahoma, North Central Texas, Arkansas, North Louisiana and West Texas, all showed slightly higher schedules.

**KANSAS**

| Company and location— | Daily capacity | Aver. daily runs May | Aver. daily runs April |
|---|---|---|---|
| Altitude Petroleum Corp., Chanute | 5,000 | (†) | (†) |
| Barnsdall Refineries, Inc., Wichita | 4,000 | 3,000 | 3,000 |
| Derby Oil Co., Wichita | 8,000 | 4,000 | 4,500 |
| Dickey Refining Co., McPherson | 5,000 | 800 | 800 |
| Eldorado Refining Co., Eldorado | 5,000 | 3,200 | 2,800 |
| Falcon Refining Co., Inc., Great Bend | 700 | 510 | 550 |
| Globe Oil & Refining Co., McPherson | 10,000 | 7,200 | 7,200 |
| Golden Rule Refining Co., Wichita | 1,500 | 700 | 700 |
| Kanotex Refining Co., Arkansas City | 12,000 | 4,500 | 4,500 |
| Kansas Gas & Gasoline Co., Winfield | 500 | 70 | 50 |
| Kreuger Refining Co., Laton | 150 | 50 | 50 |
| National Refining Co., Coffeyville | 6,500 | 4,500 | 4,500 |
| Petroleum Products Co., Chanute | 700 | 400 | 400 |
| Phillips Petroleum Co., Kansas City | 15,000 | 15,000 | 8,500 |
| Security Petroleum Co., Chase | 3,100 | 100 | 100 |
| Shell Petroleum Corp., Arkansas City | 20,000 | 15,000 | 12,000 |
| Sinclair Refining Co., Coffeyville | 12,000 | (*) | (*) |
| Sinclair Refining Co., Argentine | 9,500 | 4,500 | 4,500 |
| Skelly Oil Co., Eldorado | 23,000 | 14,500 | 12,500 |
| Standard Oil Co. of Kansas, Neodesha | 20,000 | 5,000 | 5,000 |
| United Oil & Refining Co., Hutchinson | 1,500 | (*) | (*) |
| Vickers Petroleum Co., Potwin | 3,500 | 2,800 | 2,500 |
| White Eagle Refining Co., Augusta | 16,000 | 14,000 | 13,000 |
| Total | 182,650 | 99,830 | 87,350 |

*Shut down. †Operating cracking unit, using gas oil.

**EAST TEXAS**

| Company and location— | Daily capacity | Aver. daily runs May | Aver. daily runs April |
|---|---|---|---|
| Archer Refining Co., Gladewater | 1,000 | (*) | 525 |
| Arpana Refining Co., Arp | 4,000 | 3,000 | 3,550 |
| Arrow Refining & Producing Co., Overton | 4,500 | 2,800 | 3,000 |
| Beacon Oil & Refining Co., Henderson | 4,500 | 2,100 | 1,200 |
| Canyon Refining Co., Kilgore | 800 | 500 | 250 |
| Carnation Refining Corp., Gladewater | 1,000 | 500 | 750 |
| Century Refining Co., Friars Switch | 2,000 | 1,200 | 1,800 |
| Chief Refining Co., Gladewater | 1,500 | 625 | 700 |
| Culver Refining Co., Gladewater | 400 | 150 | 300 |
| Danciger Refineries, Inc., Longview | 10,000 | (*) | (*) |
| Davenport Refining Co., Gladewater | 500 | (*) | 450 |
| Dutch Rose Refining Co., Gladewater | 750 | 200 | 500 |
| Crow Refining Co., Gladewater | 500 | (*) | 400 |
| E. & F. Refining Co., Kilgore | 200 | (*) | 15 |
| Kilgore Reclamation Co., Kilgore | 700 | 500 | 650 |
| East Texas Refining Co., Longview | 10,000 | 6,000 | 6,300 |
| Foshee Refining Co., Gladewater | 1,500 | 1,000 | 1,250 |
| Good Refining Co., Gladewater | 1,000 | 700 | 400 |
| Gilliland Refining Co., Gladewater | 1,500 | 1,250 | 1,350 |
| Gilmer Refining Co., Gilmer | 500 | (*) | (*) |
| Godlin Refining Co., Gladewater | 850 | 600 | 600 |
| Goodson-Gentry Refining Co., Gladewater | 1,200 | (*) | 650 |
| Goodson Refining Co., Kilgore | 1,500 | 1,100 | (*) |
| Hanover Refining Co., Kilgore | 1,000 | (*) | 900 |
| Hawk Refining Co., Gladewater | 800 | 230 | 650 |
| Humble Oil & Refining Co., Neches | 5,000 | 400 | 250 |
| Johnson Refining Co., Kilgore | 1,000 | 900 | 800 |
| S. & E. Refining Co., Omega | 200 | (*) | (*) |
| Kent Refining Co., Angus | 4,000 | (*) | (*) |
| Texas Refining Co. No. 2, Gladewater | 1,000 | 450 | 975 |
| Kilgore Refining Co., Kilgore | 3,000 | 1,350 | 2,000 |
| Kil-Tex Refining Co., Kilgore | 500 | (*) | 450 |
| Lake Refining Co., Gladewater | 1,700 | 1,200 | 1,500 |
| La Pren Refining Co., Kilgore | 1,500 | (*) | 1,335 |
| Lindsey Refining Co., Gladewater | 2,500 | 1,400 | 2,000 |
| Locke Refining Co., No. 1, Gladewater | 1,500 | (*) | 1,100 |
| Locke Refining Co., No. 2, Gladewater | 1,500 | 1,100 | 1,475 |
| Lotus Refining Co., Gladewater | 1,500 | 730 | 1,050 |
| Magnolia Petroleum Co., Corsicana | 5,000 | 2,300 | 2,500 |
| Master Petroleum Co., Waco | 1,000 | 400 | 400 |
| Minerva Refining Co., Minerva | 2,000 | 400 | 250 |
| L. & M. Refining Co., Kilgore | 1,000 | 175 | (*) |
| Oil Refineries, Inc., Overton | 4,000 | 1,500 | 2,500 |
| Oriental Oil Co., Dallas | 5,000 | (*) | (*) |
| Overton Refining Co., Overton | 3,500 | 1,500 | 2,000 |
| Owl Refining Co., Kilgore | 1,800 | 1,000 | 1,300 |
| Artex Refining Co., Arp | 1,500 | (*) | 1,300 |
| Panama Refining Co., Kilgore | 2,500 | 2,200 | 2,200 |
| Pennant Refining Co., Kilgore | 1,000 | 425 | 850 |
| Phoenix Refining Co., Inc., Dallas | 1,000 | 500 | 500 |
| Pine Refining Co., Camps Switch | 2,500 | (*) | 375 |
| Producers Refining Co., Reeds Switch | 2,000 | 850 | 1,000 |
| Recla Refining Co., Tunerstown | 200 | (*) | (*) |
| Recla Refining Co., Turnerstown | 200 | (*) | (*) |
| Rusk Oil & Refining Co., Overton | 3,000 | (*) | 1,145 |
| Sandy Refining Co., Big Sandy | 1,000 | 250 | 500 |
| Simms Oil Co., West Dallas | 4,000 | (*) | (*) |
| Sinclair Refining Co., Camps Switch | 5,000 | 1,200 | 1,500 |
| Solar Refining Co., Overton | 3,000 | 2,000 | 2,050 |
| Southern Refining Co., Reeds Switch | 2,500 | (*) | 1,550 |
| Southport Refining Co., Kilgore | 2,500 | 2,500 | 2,500 |
| Star Creek Refining Co., Kilgore | 2,000 | 300 | (*) |
| Supreme Refining Co., Gladewater | 1,000 | 450 | 850 |
| Taylor Refining Co., Tyler | 15,000 | 550 | 850 |
| Texanna Refining Co., Kilgore | 200 | (‡) | 100 |
| Texas Co., Dallas | 16,000 | 10,000 | 9,000 |
| Texas Oil Products Co., Gladewater | 2,000 | 800 | 800 |
| Texas Refining Co., No. 1, Kilgore | 1,000 | 800 | 785 |
| Trico Refining Co., Turnerstown | 200 | (*) | (*) |
| Trinity Refining Co., Kilgore | 2,000 | (*) | 1,600 |
| Trio Refining Co., Arp | 1,500 | 1,250 | 875 |
| Tyler Refining Co., Arp | 2,000 | 1,350 | 1,475 |
| Union Refining Co., Camps Switch | 3,000 | 1,100 | 1,375 |
| Unit Refining Co., Kilgore | 200 | (*) | 185 |
| Upshur Refining Co., Gladewater | 1,000 | 450 | 410 |
| Utah Refining Co., Kilgore | 2,000 | 1,250 | 1,450 |
| Wichita Refining Co., Gladewater | 750 | (*) | 120 |
| Total | 183,200 | 66,560 | 90,270 |

*Shut down. ‡Running tops only.

**NORTH CENTRAL TEXAS**

| Company and location— | Daily capacity | Aver. daily runs May | Aver. daily runs April |
|---|---|---|---|
| All State Refining Co., Thrall | 2,300 | (*) | (*) |
| Archer Refining Co., Megargel | 1,500 | 300 | 300 |
| Atlantic Pacific & Gulf Refining Co., Wichita Falls | 5,000 | (†) | (†) |
| Baird Refining Co., Baird | 1,400 | 800 | 1,375 |
| Canyon Oil & Gas Co., Inc., The, Cisco | 500 | 100 | 150 |
| Continental Oil Co., Wichita Falls | 6,000 | 4,250 | 4,000 |
| Empire Oil & Refining Co., Gainesville | 5,000 | 2,500 | 2,350 |
| Exchange Petroleum Corp., Albany | 500 | 200 | 275 |
| Falls Refining Co., Wichita Falls | 2,000 | 350 | 500 |
| Gratex Refining Co., Graham | 500 | 100 | 95 |
| Gulf Refining Co., Fort Worth | 10,000 | 4,400 | 4,500 |
| Gulf Refining Co., Sweetwater | 5,000 | 4,000 | 4,000 |
| Haskell Oil Refining Corp., Breckenridge | 200 | (*) | (*) |
| Jacksboro Refining Co., Jacksboro | 50 | 20 | 10 |
| LaSalle Petroleum Co., Burkburnett | 3,500 | 300 | 300 |
| Magnolia Petroleum Co., Fort Worth, No. 1 | 12,000 | 4,000 | 5,000 |
| Magnolia Petroleum Co., Fort Worth, No. 2 | 6,000 | (*) | (*) |
| Marathon Oil Co., Fort Worth | 5,000 | 4,000 | 3,000 |
| Moutray Refining Co., Hawley | 600 | 150 | 135 |
| Muenster Refining Co., Muenster | 300 | 120 | 100 |
| New Deal Refining Co., Abilene | 300 | 190 | 275 |
| Nolting Refining Co., Sweetwater | 1,000 | 50 | 220 |
| Margold Refining Co., West Olney | 400 | 200 | ... |
| Octane Refining Co., Chautauqua | 500 | 350 | ... |
| Olney Oil & Refining Co., Olney | 3,000 | 1,600 | 1,850 |
| Omega Refining Co., Brownwood | 200 | (*) | 135 |
| Panhandle Refining Co., Wichita Falls | 5,000 | 2,350 | (*) |
| Paragon Refining Co., Lueders | 400 | 160 | 175 |
| Pentex Refining Co., Echo | 400 | (*) | (*) |
| Petroleum Oil Interests, Inc., Brownwood | 1,000 | 500 | ... |
| Pilot Point Refining Co., Pilot Point | 500 | 100 | 100 |
| Sinclair Refining Co., Pilot Point | 5,000 | 1,800 | 1,800 |
| Southtex Refining Co., Trent | 250 | 150 | 215 |
| Southland Refining Co., Olney | 1,000 | (*) | (*) |
| Star Refining & Producing Co., Fort Worth | 1,000 | 600 | 700 |
| Starlight Refining Co., Inc. | 300 | 180 | 120 |
| Superior Refining Co., Tiffin | 800 | (*) | 150 |
| Taylor Refining Co., Taylor | 6,000 | 500 | 450 |
| Taxman Refining Co., Wichita Falls | 3,000 | 2,600 | 1,000 |
| Texas Pacific Coal & Oil Co., Fort Worth | 3,000 | 2,000 | 2,000 |
| Texas Pacific Coal & Oil Co., Caddo | 1,000 | 800 | 600 |
| Tucker Refining Co., Wichita Falls | 200 | 125 | 125 |
| Waggoner Refining Co., Electra | 6,000 | 50 | (*) |
| Watt Refining Co., Brownwood | 200 | 100 | 130 |
| Total | 107,800 | 39,995 | 36,025 |

*Shut down. †Cracking only.

**SOUTHWEST TEXAS**

| Company and location— | Daily capacity | Aver. daily runs May | Aver. daily runs April |
|---|---|---|---|
| Amsco Refining Co., Mirando City | 2,500 | 850 | 800 |
| Bee Oil & Refining Co., Pettus | 1,000 | 100 | 100 |
| Capital Refining Co., Luling | 2,500 | (*) | (*) |
| Chapa Refining Co., Laredo | 100 | 500 | 50 |
| Humble Oil & Refining Co., San Antonio | 5,000 | 2,400 | 1,350 |
| Magnolia Petroleum Co., Luling | 7,000 | 3,650 | 5,200 |
| Peitus Refining Co., Pettus | 1,000 | 500 | 570 |
| Phoenix Refining Co., San Antonio | 500 | 420 | 350 |
| Pioneer Oil & Refining Co., Somerset | 1,500 | 850 | 1,000 |
| Price Refining Co., San Antonio | 500 | 70 | 65 |
| Texas Co., San Antonio | 3,000 | 3,000 | 3,000 |
| Rado Refining & Producing Co., McAllen | 500 | 200 | 150 |
| Texas Petroleum Products Co., Somerset | 1,500 | 400 | 425 |
| Total | 26,600 | 12,940 | 13,060 |

*Shut down.

# Canadian Fields

(Continued from Page 145)

stock, of which 250 go to Home Oil Co. for its royalty interest. For production and other equipment the Freehold company receives $5,000 cash. Directors of the Freehold company were authorized to dispose of the Royalite stock and use the money to acquire a half interest in the lease held by Union Drilling Co. in LSD 8, Section 21-18-2w5. A new corporation, to be known as Union Freehold Oil Corp. is to be formed to complete Union Drilling's No. 1 test, standing at 2,758 feet.

### Prairie Drilling Projects

A new organization, Prairie Royalties, Ltd., backed by Calgary and Vancouver capital, is planning a four-well drilling campaign for the summer. Prairie's No. 1 has been located in LSD 5, Section 21-18-2w5, west of Union Drilling Co.'s No. 1 to the northwest. Prairie Royalties' No. 2 will be drilled in Section 28-18-2w5, regarded as proven acreage, in LSD 11, just north of British Dominion's No. 4 and south of Sunburst-Mid Royal's No. 1.

The two other tests will be on other acreage in the southern foothills. A test to be known as Mar Jon-Prairie's No. 3 will be drilled on the Watson structure, west of Lundbreck, on which Mar Jon Oil Co. has secured large holdings. Prairie Royalties' No. 4 will be the former Lundy Syndicate's No. 1 in LSD 3, Section 6-22-4w5, on the Birch Ridge structure west of Calgary, which has been spudded, but has been standing. It is about 6 miles south and east from Elbow Oils' No. 1 which recently picked up the Dalhousie sand at 4,350 feet.

### Light Crude Development

In the Central Turner Valley, a systematic development program is being planned by Trinity Petroleum Co. to test the McDougall-Segur light crude sand in Section 12-20-3w5, where the Trinity company has secured 100 acres from the McDougall-Segur Exploration Co. The McDougall-Segur interests recently sold their deep lime production to the Royalite Oil Co. but retained the right to take light crude production from the horizons above the lime.

In 1927 New McDougall-Segur Oil Co.'s No. 2 deep test struck a 25-foot sand at 2,645 feet, which for a time yielded 100 bbls. a day. of 56 gravity crude. In the same general area Widney Petroleums' No. 1 in 1929 took 19,000 bbls. in 10 months from the same horizon before deepening to the lime. Alberta government geologists have strongly advocated a systematic testing of this horizon, where the sand can be reached at 3,000 feet or less at a cost approximately one-fifth of drilling to the naphtha horizons of the Madison. Following the sale of its Madison interests to the Royalite Oil Co., New McDougall-Segur Oil Co. planned to drill a shallow test west of Widney's No. 1 Producer.

Directors of British Dominion Oil & Development Corp. have recommended to the shareholders the sale to the Royalite company of the company's interest in deep lime production on their acreage in Central Turner Valley subleased from McDougall-Segur Exploration Co. The deal covers deep lime interests in 10 acres in LSD 6, Section 12-20-3w5, with British Dominion's Nos. 2 and 3 producers, together with production equipment and some surface rights; the British Dominion company to receive 2,800 shares of Royalite stock. The wells were small naphtha producers, delivering 219 bbls. in March.

Directors of Wellington Oil & Gas Co. have agreed to sell their No. 1 well and acreage in LSD 1, Section 20-19-2w5, to the Royalite Oil Co. for a cash consideration of $100,000. March production amounted to 333 bbls.

It is understood negotiations are in progress with Okalta Oils, Ltd. and Home Oil Co. for the acquisition by the Roy-

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alite Oil Co. of their deep lime properties, the former in Section 1-20-3w5, Central Turner Valley, and the latter in Section 20-19-2w5, South Turner Valley. Okalta production in March was 769 bbls. and Home production 1,845 bbls., this including some light crude oil.

### Annual Meetings

Shareholders of South West Petroleum Co., subsidiary of Imperial Oil, Ltd., held their annual meeting recently at Calgary, electing the following officers: President, J. H. McLeod; directors, Alexander Hannah, Dr. Oliver B. Hopkins, W. M. Doherty, E. H. Teagle; secretary-treasurer, T. E. Burns.

Shareholders of Dalhousie Oil Co. elected the following officers; President, G. H. Smith; vice president, Alexander Hannah; directors, J. H. McLeod, A. C. Newton, N. J. Christie; secretary-treasurer, T. E. Burns.

### Tests in the Foothills

On the west side of the Birch Ridge structure, west of Calgary, Elbow Oils' No. 1, LSD 11, Section 35-22-5w5, is shut down at 4,375 feet after drilling 25 feet into the Dalhousie sand. No showings have been reported, but the company has tied up some additional acreage.

In the Forest Reserve area west of Olds, Hunter Valley Oil Co.'s No. 1 McLaren, Township 31-10w5, is down 2,130 feet and underreaming.

On the Pekisko Hills structure south of Turner Valley, Pekisko Hills Co.'s No. 1, LSD 6, Section 6-17-2w5, is below 450 feet.

On the Watson structure, Raven Oils' No. 1, Section 20-9-2w5, is resuming at 80 feet.

### Border Fields

On the Twin River structure south of Lethbridge, Nordon-Roney's No. 2 Twin River, LSD 11, Section 2-2-20w4, is running 3-inch tubing before testing production from the deep lime at 3,930 feet.

### Duvernay Gasser

On the Duvernay structure north of Edmonton, Frontier Development's No. 1 Brosseau, LSD 8, Section 36-55-12w4, northeast of Vegreville, has struck what appears to be a fair commercial dry gas flow at 960 feet, similar to that in the Viking Field, and may represent an extension of that area, though the flow was encountered at much shallower depth. No. 1 Brosseau is the third test drilled on the Duvernay structure in recent years. Earlier tests drilled by Alberta Pacific Consolidated Oils, Ltd., and Frontier Development Co. encountered encouraging oil and gas shows but drilled into salt water, and No. 1 Brosseau was located higher on structure in the hope of getting commercial oil. The gas strike is possibly in a stray sand, as the important oil and gas showings in the two other wells were encountered below 1,300 feet.

### British Columbia Operations

In the Fraser Valley area, Noble Francis Oil & Gas Co. has been organized at Vancouver to continue operations started by the Noble Francis Syndicate on acreage south of New Westminster. Directors are: J. T. Wilson, O. Emerson, Capt. Robert Sinclair, J. W. Jones. No. 1 well has encountered several fair shows of gas at shallow depth.

### Lloydminster Gasser

In central-western Saskatchewan, Lloydminster Gas Co.'s No. 1, LSD 6, Section 11-50-28w3, on the western end of the Ribstone-Blackfoot structure, has been drilled into the sand. On deepening a short distance into the sand found at 1,800 feet, the well blew in with tremendous force, developing an estimated open flow of 15,000,000 feet a day with around 670 pounds rock pressure. The gas blew 1,300 feet of water used in cementing clear of the hole in a few seconds, and blew a 40-foot bailer through the top of the derrick. The company, with offices at Lloydminster, has already secured a franchise to supply that town and is planning to lay a mile of transmission line and a local distributing system this summer. If the flow of No. 1 holds up a large gas field is indicated, which may be utilized to supply Battleford and Saskatoon, and, possibly, the cities of southern Saskatchewan as well. The strike represents the first commercial gas production ever developed in the province of Saskatchewan.

## Crude Control Essential Shell Union Report Says

The need for adequate control of crude oil production is emphasized in the annual report of the Shell Union Oil Corp. The petroleum industry has certainly not yet turned the corner, the report states. "Conditions have undoubtedly improved and we can look forward to the coming year with a greater degree of confidence than has been the case for several years, but unless a more vigorous enforcement of production control is effected, it is not too much to say that failure is bound to attend present efforts to improve conditions within the industry."

All such measures as refinery control, price fixing or elimination of unfair marketing practices are subsidiary to and dependent for their effectiveness upon successful production control. When, however, control over crude production is established the provisions of the code, with perhaps some strengthening, will be ample to provide for fair and orderly marketing. "There is still too great an inclination to look for palliatives rather than to strike at the root of the evil." The opinion is expressed that the proposed gasoline purchase pool can be effective only if the supply of crude is balanced with demand, and that so long as this is not the case such pools will encourage overproduction of gasoline. Moreover, stabilization should not be limited to the domestic industry, but once the American petroleum industry is on a stable basis it should take its part in measures for international stabilization.

Drilling by Shell Union operating companies was again restricted to the minimum required for protection of reserves and fulfillment of lease obligations. Shell Union companies participated in 19 plans under the code designed to prevent reckless overdevelopment of different pools such as occurred in East Texas. Drilling developed further Shell Union reserves in California, Kansas, Oklahoma, Texas and Louisiana.

Particular attention of the stockholders is directed by the report to the heavy tax burden imposed upon the oil industry. In 1933 Shell Union Oil Corp. and its related companies paid more than $5,200,000 in Federal, state, county and municipal taxes while taxes on products marketed by the company amounted to $48,044,769.73 or 28.8 per cent of its gross operating earnings.

Total production of crude by Shell Union operating companies was 39,961,726 bbls. gross and 35,032,013 bbls. net. Due to the effect of proration the Shell Union companies purchased 33,681,839 bbls. of crude, excluding royalty oil, although their shut-in daily production is several times their total crude oil requirements. Total daily crude oil and pressure distillate intake capacity of Shell refineries was 290,000 bbls. at the end of the year and their actual intake of crude for the year was 65,881,560 bbls. compared with 59,525,010 in 1932. The report discloses that Shell Union now manufactures and markets more than 120 petroleum products ranging from gas to coke, and a year seldom passes without new products being developed with sound prospects for the future.

Shell Union shows a net operating loss for 1933 of $5,250,290.51. A profit of $1,009,325.62, realized through purchase and retirement of the company's own debentures, reduced this loss to $4,240,964.89. The 1933 loss brought the surplus account deficit to $17,081,141.36. Current assets at the end of 1933 were $78,399,162.76. Current liabilities totaled $21,615,112.02.

As a result of a shortened work week established early in 1933, and of wholehearted compliance with the code, the total numbers of employes was increased by 5,650.

## Oklahoma Fields

(Continued from Page 132)

quarts in Hunton lime at 2,420-2,617 feet and flowed 230 bbls. in 24 hours.

Blackstock and others' No. 1 Lewis, NE cor. SE Section 19-2-7, in the John Fitts Pool, was drilling at 4,460 feet. It tested Hunton lime at 3,975-4,255 feet and swabbed 30 bbls. Sylvan shale was topped at 4,255-70 feet. Viola lime was topped at 4,378 feet, where there was a show of oil.

Crosbie & Moran's No. 1 Hardin, SW cor. NE Section 30-2-7, thus far a gas well spraying oil, is producing about 25 bbls. of oil daily. It may be deepened. It is bottomed at 1,820 feet.

### In Southern Counties

Heiden & Taylor will deepen No. 1 Crutcher, SW cor. NE Section 11-1n-12w, Comanche County, old total depth 1,185 feet. Six-inch pipe was set at 1,135 feet and the crew was cleaning out. It is a wildcat.

In Marshall County, C. H. Scofield's No. 1 Little, SW SW NW NW Section 30-7s-6e, was dry and abandoned at 473 feet.

H. Ables' No. 8 Davidson Sullivan was completed, making 12 bbls. of oil and 8 bbls. of water from limestone at 655-712 feet, which had been acidized.

Ben Russell has material in for a wildcat test, No. 1 Zumbuem, NE cor. SW Section 21-4s-12w, Cotton County.

In Stephens County, J. G. Beard's No. 1 Willis, NE NE SE SW Section 23-2s-6w, deepened to sand at 1,740-1,805 feet, is a 15-bbl. completion.

In Carter County, Coline Oil Co. has rig up for No. 10 Higgins, SE SW NW Section 8-2s-2w. Ben Barnett and others have made a location for No. 1 Lynn, SE NW NE Section 31-1s-2w.

Samaden Oil Co. has a 5-bbl. completion in No. 4 Trahern, C SW SE NW Section 31-1s-2w, from a broken sand series 2,167-2,355 feet.

Amos Drilling Co. abandoned No. 3 Mitchell, C SE NE NW Section 19-1s-2w, at 1,612 feet. There was no Tatums sand.

Sykes and others completed No. 1-A Mulkey, C NE Section 16-1s-8w, as a gas well. It is estimated good for 10,000,000 feet, with 600 pounds rock pressure.

## Wildcat Operations in Kansas

(Continued from Page 129)

**ROOKS COUNTY**

Seeley et al's No. 1 Doughty, C SW SW Sec. 15-8-19w.. Spudded and S.D.
Phillips Pet. Co.'s No. 1 Dopitz, C SW SW Sec. 31-8-17w.. P.B. to 3,217 ft. and acidized; 14 bbls. oil, 82 bbls. wtr. in 12 hrs.

**RUSH COUNTY**

Central States L. & P. Co.'s No. 1 Basgall, SE cor. Sec. 10-17-16w ..... Location.

**RUSSELL COUNTY**

C. L. Price et al's No. 1 Bender-B, NW SE Sec. 10-16-13w ..... Material.
Western Exploration Co.'s No. 1 Andrea, SW cor. Sec. 30-15-12w ..... Siliceous lime 3,374-90 ft.; S.O.

**SEDGWICK COUNTY**

D. Lauck and Shoreline Oil Co.'s No. 1 Jordan, NW SW SE Sec. 6-28-1w ..... Wilcox 3,652-53 ft.; flowed 175 bbls. oil in 24 hrs. with 150 bbls. wtr.; comp.
D. Lauck's No. 1 Gillespie, NE SE SW Sec. 6-28-1w.... Fishing 405 ft.
Sovereign Oil Co.'s No. 1 Nichols, C NW SE Sec. 20-25-1w ..... S.D. 360 ft.

**STAFFORD COUNTY**

Vickers Pet. Co. and Phillips Pet. Co.'s No. 1 Cravens, SW NE Sec. 15-25-11w ..... Viola 3,920-22 ft.; 182 bbls. oil, 263 bbls. wtr.; comp.
Stanolind O. & G. Co.'s No. 1 Denker, 693 ft. from N line, 330 ft. from W line, SW Sec. 10-22-12w ..... Rig.

**SUMNER COUNTY**

Morgan & Flynn's No. 1 Mercer, NW NE NW Sec. 36-32-1w ..... Spudding.

**TREGO COUNTY**

Central Commercial's No. 2 King, C SE SW NE ..... Drlg. out cave; T.D. 4,015 ft.

**WOODSON COUNTY**

Lewis Bros.' No. 1 Riggs, SW cor. Sec. 10-26-14 ..... T.D. 765 ft.; abd.
Sheedy et al's No. 1 Street, NW SE NW Sec. 28-24-14... Location.

## Gulf Coast Fields and Wildcats

(Continued from Page 135)

**BIG CREEK—FORT BEND COUNTY**

Gulf Prod. Co.'s No. 63 Davis, 2,270 ft. SW of No. 59 and in line with No. 21 and No. 59 in M. Young Sur. ..... Drlg. shale and lime 2,933 ft.

**RABBS RIDGE—FORT BEND COUNTY**

Humble O. & R. Co.'s No. 21-A F. J. Booth ..... Drlg. shale 4,095 ft.
Humble O. & R. Co.'s No. 26-A Lockwood & Sharp, 755 ft. N and 14 ft. W of No. 26-B, in J. Rabb Sur. ..... Location.
Humble O. & R. Co.'s No. 27-A Lockwood & Sharp, 1,149 ft. W of No. 26-A and 755 ft. W of No. 27-B in J. Rabb Sur. ..... Location.
Humble O. & R. Co.'s No. 27-B Lockwood & Sharp, 1,153 ft. W of No. 26, J. Rabb Sur. ..... T.D. 5,287 ft.; W.O.C.
Naylor's No. 4 S. B. Gehr, 1,260 ft. from W line and 330 ft. from S line of lease in Samuel Kennedy Sur. ..... T.D. 5,406 ft.; set screen; wouldn't flow; S.D. orders.

**LONG POINT—FORT BEND COUNTY**

Olsson et al's No. 1 McFarland ..... Cutting and pulling screen; T.D. 1,003 ft.

**ORCHARD—FORT BEND COUNTY**

Gulf Prod. Co.'s No. 39 Moore ..... Drlg. shale 3,475 ft.

**SUGARLAND—FORT BEND COUNTY**

De Walt Oil Co.'s No. 1 Peterson ..... Top salt 4,512 ft.; T.D. 4,514 ft.; P.B. 3,300 ft.; sand shale 4,262 ft.; S.D.
D.E.M. Oil Co.'s No. 2 Great Western ..... T.D. 152 ft. in rock; to set screen.
Yount Lee Oil Co.'s No. 4 Broussary & Orme, M. Dunman Sur., 129 ft. SW of No. 3 ..... Top salt 4,565 ft.; T.D. shale and pyrite 5,358 ft.; stuck drill stem; reaming 3,353 ft.
Yount Lee Oil Co.'s No. 41 Cade, Fitzsimmons Sur. ..... Rigging up.
Yount Lee Oil Co.'s No. 40 Cade, 430 ft. NW of No. 2-B, 360 ft. from E line of lease and in line with No. 39 and No. 2-B, Fitzsimmons Sur. ..... Drlg. hard sand and lime 3,131 ft.
Yount Lee Oil Co.'s No. 2 Mathis, M. Dunman Sur., direct offset No. 1 Spencer ..... Drlg. shale 3,765 ft.; base salt 3,760 ft.
Yount Lee Oil Co.'s No. 12 Smith, 330 ft. W of No. 11 and 100 ft. N of No. 2 ..... Drlg. sand and lime 4,989 ft.
Yount Lee Oil Co.'s No. 22 Smith ..... Derrick.

**ARRIOLA—HARDIN COUNTY**

Republic-Houston's No. 2-X Arriola fee ..... Drlg. salt water sand 4,511 ft.

**BATSON—HARDIN COUNTY**

Danciger O. & R. Co.'s No. 2 Hooks, W. Donoho Sur., 330 ft. E of CWL, Blk. 24 ..... T.D. 4,795 ft.; flowed salt water; P.B. 4,773 ft.; still showing salt water.

### SARATOGA—HARDIN COUNTY

**Rio Bravo Oil Co.'s No. 108 Jordit, 120 ft. S and 150 ft. W of No. 98 well** ..... T.D. 986 ft.; set screen; bailing.
**Seismo Oil Co.'s No. 1 Casewell, 940 ft. S of NW cor. and 600 ft. from E line, B.B.B.&C. Sur.** ..... T.D. 3,212 ft.; shut down.
**Skinner Oil Co.'s No. 2 Sessler** ..... Drlg. shale 1,976 ft.

### SOUR LAKE—HARDIN COUNTY

**Parr et al's No. 1 Benard, in W.C.R.R. Sur. No. 69 (west edge)** ..... T.D. 7,061 ft.; set screen; prep. to wash in.
**Steinberger Pet. Co.'s No. 1 Weiss, 150 ft. W of Parr No. 1 and 50 ft. out of SE cor. of Blk. 28, E. B. Williams Sur.** ..... Location.
**Yount Lee Oil Co.'s No. 6 Lynn, 250 ft. from W line and 200 ft. from N line of 43-acre tract in Sour Lake Oil Co. Sub.** ..... Drlg. 2,915 ft., shale and lime.

### GOOSE CREEK—HARRIS COUNTY

**Edwards Drlg. Co.'s No. 1 Matthews, 40 ft. from S line and 37 ft. from W line of 1-acre tract in Wm. Scott Sur. No. 67** ..... T.D. 4,020 ft.; prep. to bring in.
**Gulf Prod. Co.'s No. 13 St. Land Prod., 39 ft. from E line or 89.4 ft. W of Sun Oil Co.'s No. 1 McFarland, Wm. Scott Sur. No. 67** ..... T.D. 4,605 ft.; resetting screen.
**Gulf Prod. Co.'s No. 18-A Tabb-fee, 217 ft. S of No. 17-A and C of tract in Wm. Scott Sur.** ..... Drlg. rock 2,350 ft.
**Hamil & Smith's No. 1 Chapman & Bryan (workover)** ..... Drlg. oil sand 4,450 ft.
**Hoffner & Moore's No. 1 A. A. Wright, 50 ft. N and 50 ft. E of SW cor. of Blk. 7, Wm. Scott Sur., Abst. No. 65** ..... T.D. 5,221 ft., shale; standing.
**Humble O. & R. Co.'s No. 80 Simms-Smith** ..... Bldg. derrick.
**Humble O. & R. Co.'s No. 27 Sweet, 37 ft. W of SE cor. of Hughes 7½-acre tract and 40 ft. from N line of lease, Wm. Scott Sur. No. 67** ..... Drlg. shale 2,994 ft.
**Humble O. & R. Co.'s No. 28 Sweet, 13 ft. W of SE cor. of Scott 2½-acre tract and 53 ft. from N line of lease, Wm. Scott Sur. No. 67** ..... Location.
**Miramar Oil Co.'s No. 2 Hughes, 284 ft. from S line and 50 ft. from E line of 7½-acre tract in Wm. Scott Sur.** ..... Drlg. shale and lime 3,405 ft.
**Jay Simmon's No. 1 Kerwin Mitchell, SE cor. of 6-acre tract** ..... Drlg. hard sand rock 3,542 ft.
**Wilhite's No. 1 Gillette** ..... Drlg. sand 2,802 ft.
**Wilhite's No. 1 Isenhour** ..... Rigging up.
**Wilhite's No. 2 Gillette, 100 ft. SW from N line of SW Hoskins tract in Lot 1 and 50 ft. NW from W bank of stream, Wm. Scott Sur. No. 66** ..... Derrick.

### HUMBLE—HARRIS COUNTY

**Rio Bravo Oil Corp.'s No. 8 fee, 250 ft. E, 100 ft. S of No. 2 fee** ..... Spud.
**Texas Co.'s No. 47 Stevenson, J. B. Stevenson Sur., 859 ft. E, 457 ft. S of NW cor., Lot 1-A** ..... T.D. 5,238 ft.; preparing to set whipstock.

### PIERCE JUNCTION—HARRIS COUNTY

**Harris & Smith's No. 1 Gulf fee, 4-acre tract in W. H. Jones Subd.** ..... Drlg. gumbo and lime 2,850 ft.
**Rio Bravo Oil Corp.'s No. 9-A Settegast, 1,575 ft. N line, 350 ft. E line NE cor. "A" lease, J. A. Kopman Sur.** ..... T.D. 4,510 ft.; rigging up to work over; standing.
**Rio Bravo Oil Corp.'s No. 12-A Settegast, 1,410 ft. N line, 650 ft. E line, J. A. Kopman Sur.** ..... T.D. 5,404 ft.; P.B. 4,517 ft.; fishing drill stem.
**Rio Bravo Oil Co.'s No. 24-A Settegast, J. Kopman Sur. No. 44, 1,000 ft. S, 200 ft. W of NE cor. of "A" lease.** ..... Drlg. shale 4,998 ft.

### TOMBALL—HARRIS COUNTY

**Amerada-Rycade's No. 1 Ashley, 500 ft. E and 466 ft. S of Ashley tract in Joseph House Sur.** ..... T.D. 1,090 ft.; W.O.C.
**Amerada and Stanolind's No. 3 Fletcher, 464 ft. from W line and 466 ft. from N line of lease in J. House Sur. No. 34** ..... T.D. 5,598 ft.; W.O.C.
**Humble & Magnolia's No. 3 Bloecher, 984 ft. from N line and 663 ft. from W line of lease, J. Hooper Sur. No. A-375** ..... Derrick.
**Humble O. & R. Co.'s No. 1 Johlke, 466 ft. from S line and 300 ft. from E line of 50-acre tract in J. H. Edwards Sur.** ..... T.D. 5,612 ft.; to abandon.
**Humble O. & R. Co.'s No. 1 C. F. Hoffman, 1,900 ft. from S line and 466 ft. from E line of 123-acre tract, I.&G.N. Sur. No. 952** ..... Coring sand and shale 5,510 ft.
**Humble O. & R. Co.'s No. 2 C. F. Hoffman, 466 ft. E of most easterly W line and 466 ft. N of most northerly S line of 100-acre lease in J. House Sur.** ..... T.D. sand 5,587 ft.; running screen.
**Humble O. & R. Co.'s No. 1-B J. F. W. Kobs, 466 ft. from S line and 405 ft. E. of W line of tract, J. Edwards Sur.** ..... Derrick.
**Humble-Magnolia's No. 3 Theo. Krug, 6,360 ft. N of most southerly S line and 235 ft. W of W line of Scherer 112-acre tract in J. H. Edward Sur. No. 20** ..... Drlg. shale 2,293 ft.
**Humble-Magnolia's No. 1 Krug, 600 ft. N and 187 ft. E from SW cor. of J. F. W. Kobs 30.6-acre tract in J. H. Edwards Sur.** ..... Location.
**Humble-Magnolia's No. 2 Krug, 466 ft. from E line of lease and 800 ft. S of S line of Sherer 112-acre tract in J. H. Edwards Sur.** ..... Location.
**Humble O. & R. Co.'s No. 3 Reid, 466 ft. N of S line and 466 ft. W of E line of lease in Goodrich Sur. No. A-305** ..... T.D. 5,553 ft.; comp. 26 bbls. hr., ¼-in. choke.
**Humble & Magnolia's No. 2 Rudel-Oster, 150 ft. S of Amerada & Stanolind's No. 2 Fletcher, half way between E and W lines of 50-acre tract in J. House Sur. No. 34** ..... Location.
**Humble-Magnolia's No. 1-B Schultze, 466 ft. from W line and 3,276 ft. from S line of tract in J. H. Edwards Sur. No. 20** ..... Derrick.
**Humble & Magnolia's No. 1 H. Theak, 200 ft. from E line and 2,500 ft. from S line of 180-acre tract in Wm. Hurd Sur.** ..... Drlg. shale 4,477 ft.
**Shell Pet. Co.'s No. 1 W. W. Baker, 440 ft. S of C of N line of lease, J. House Sur. No. 34** ..... Location.
**Shell Pet. Co.'s No. 2 W. W. Baker, 630 ft. S of No. 1 and 466 ft. from W line of lease, J. House Sur. No. 34** ..... Location.
**Skelly Oil Co.'s No. 1 Schultz, J. H. Edwards Sur., 466 ft. from S line, 404 ft. from E and W lines** ..... Rigging up.
**Texas Co.'s No. 2 Hirsch, 1,000 ft. E of W line and 850 ft. N of S line of lease in J. House Sur.** ..... T.D. 5,609 ft.; prep. to drill plug.
**Texas Co.'s No. 2 Scherer (W. V. Bowles), 2,150 ft. S and 466 ft. W of NE cor. of lease in J. House Sur.** ..... Elev. 212 ft.; drlg. shale 3,418 ft.

### ESPERSON—LIBERTY COUNTY

**General Crude Oil Co.'s No. 7 Davis, 100 ft. S of No. 4 in David L. Kokernut Sur.** ..... T.D. 4,556 ft.; F.A.
**General Crude Oil Co.'s No. 8 Davis, 660 ft. from S and 1,000 ft. from E line of lease in D. Kokernut Sur.** ..... Rigging up.

### HULL—LIBERTY COUNTY

**Bashara Oil Co.'s No. 1 Hannah, Jessie De Vore Sur., 125 ft. E of Texas Co.'s No. 1 Hannah, 50 ft. N of S line** ..... T.D. 4,475 ft.; P.B. 3,600 ft.; preparing to abandon.
**Eclipse's No. 4 Barrow** ..... Preparing to work over.
**W. B. Flynn's No. 14 Abel, 90 ft. from N line and 150 ft. from E line of 10-acre tract in J. Devore Sur.** ..... Standing 605 ft., shale.
**Gulf Prod. Co.'s No. 100 Phoenix, 488 ft. from W line and 155 ft. N of Mirimar lease in E. G. Devore Sur.** ..... Drlg. shale 4,006 ft.
**Gulf Prod. Co.'s No. 99 Phoenix, 100 ft. N and W of NE cor. of Mirimar's 25-acre tract** ..... T.D. 4,300 ft.; prep. to set csg.
**Houston Oil Co.'s No. 8 Orgain, 156 ft. W of No. 6 and 132 ft. S of No. 7 in J. Devore Sur.** ..... T.D. 5,084 ft.; set screen.
**Mirimar Oil Co.'s No. 10-A Phoenix, 250 ft. E of No. 3 and 100 ft. from N line of lease in J. Devore Sur.** ..... Drlg. sand and lime 4,089 ft.
**Mirimar Oil Corp.'s No. 4-B Phoenix, 200 ft. E of No. 1 and 50 ft. from N line of lease in J. Devore Sur.** ..... Drlg. shale 4,972 ft.
**Republic Prod. Co.'s No. 151 Dolbear, J. Devore Sur., 200 ft. E of No. 35** ..... T.D. 4,852 ft.; comp. 156 bbls. 12 hrs.
**Sun Oil Co.'s No. 4-A Carr, 196 ft. due W of No. 3, 50 ft. from N line of lease** ..... T.D. 4,735 ft.; comp. 617 bbls. ½-in. choke.
**Texas Co.'s No. 7 Barrow fee, 458 ft. S and 350 ft. W of NE cor. of tract in J. Devore league** ..... Derrick.
**Humble O. & R. Co.'s No. 10 Wilder** ..... Location.

### LIBERTY COUNTY

**Gulf Coast Drlg. & Prod. Co.'s No. 23 Keystone Mills** ..... Rigging up.
**Mrs. I. M. Lemon Oil Co.'s No. 1 Richardson, 120 ft. E of Gulf & Humble's No. 1 Carter, in M. G. White Sur.** ..... T.D. 3,882 ft.; rerun tubing; standing.

### CONROE—MONTGOMERY COUNTY

**Alpha Pet. Co.'s No. 4 Stephens** ..... T.D. 5,103 ft.; comp. 100 bbls. hr., ½-in. choke.
**Gulf Coast Drlg. & Prod. Co.'s No. 24 Keystone Mills** ..... T.D. 1,331 ft.; W.O.C.
**Humble O. & R. Co.'s No. 6-D Keystone Mills** ..... Drlg. shale at 980 ft.
**Gulf Coast Drlg. & Prod. Co.'s No. 22 Keystone Mills, A. Steele Sur.** ..... T.D. 5,077 ft.; comp. 481 bbls. daily, ¼-in. choke.
**Houston-Tide Water Oil Co.'s No. 8 Cartwright, 1,263 ft. from S line and 2,034 ft. from W line of lease in John Davis Sur.** ..... Derrick.
**Houston-Tide Water Oil Co.'s No. 9 Cartwright, 1,263 ft. from S line and 1,200 ft. from W line of lease in John Davis Sur.** ..... T.D. 5,182 ft.; W.O.C.
**Humble O. & R. Co.'s No. 1-E Cartwright, E offset to Brown & Wheeler's No. 1 Gilbert, J. A. Davis Sur.** ..... Trying to bring in, 5,164 ft.; no pressure on tubing or casing.
**Humble O. & R. Co.'s No. 23 Keystone Mills** ..... T.D. 5,127 ft.; comp. 56 bbls. hr., ½-in. choke.
**Humble O. & R. Co.'s No. 1 McComb** ..... Drlg. shale 3,915 ft.
**Pine Tree Oil Co.'s No. 1 South Texas** ..... Drlg. shale 5,182 ft.
**Humble O. & R. Co.'s No. 47 Moore** ..... Shale 5,105 ft.; W.O.C.
**Humble O. & R. Co.'s No. 51 Moore** ..... Drlg. shale 5,020 ft.
**Humble O. & R. Co.'s No. 4 Moorehead** ..... Drlg. shale 5,060 ft.
**Humble O. & R. Co.'s No. 63-A South Texas Development Co.** ..... Drlg. shale 4,544 ft.
**Strake Oil Co.'s No. 5 Keystone Mills** ..... T.D. 5,083 ft.; W.O.C.
**Sun Oil Co.'s No. 13 Keystone Mills, 704 ft. E from No. 17 well, thence S 282 ft. in A. Steele Sur.** ..... Location.
**Texas Co.'s No. 12 Moody** ..... T.D. 5,111 ft.; comp. 50 bbls. hr.

### PORT NECHES—ORANGE COUNTY

**Texas Co.'s No. 2 Orange Natl. Bank, Jacob Beaumont Sur., 1,538 ft. W and 200 ft. S of NE cor. of lease** ..... Drlg. shale 5,960 ft.
**Texas Co.'s No. 2-B Polk, 695 ft. N, 150 ft. E of NE cor. of N. Jacob Beaumont Sur.** ..... T.D. 5,997 ft.; drlg. through cmtd. plug at 1,232 ft.

### LIVINGSTON—POLK COUNTY

**Gist Oil Co.'s No. 1 Kingsbury County Holding Corp., A. Viesca Sur., 150 ft. N at R/A and 113 ft. E along S line of tract** ..... T.D. 4,242 ft.; making 10 bbls. distillate hour; comp.
**Gem Oil Co.'s No. 4 Davis Holmes, 1,126 ft. from S line and 1,399 ft. from W line of 157-acre tract in A. Viesca Sur.** ..... Drlg. shale 3,327 ft.
**H. B. Owenby's No. 1 Holmes, 330 ft. from N line and 330 ft. from E line of 25-acre lease in A. Viesca Sur.** ..... Coring 4,258 ft.
**Reading & Bates' No. 2 Davis Holmes, 850 ft. from N line and 330 ft. from E line of lease in A. Viesca Sur.** ..... Drlg. shale 4,250 ft.
**Smith & McDannald's No. 2 Munson Heirs, 575 ft. from E and 330 ft. from S edge 31.35-acre tract in Mary C. Swinney Sur.** ..... T.D. 4,293 ft.; W.O.C.

### GRETA—REFUGIO COUNTY

**D. & D. Oil Co.'s No. 1 Fannie Heard, 330 ft. from N and E lines of Lot No. 14** ..... T.D. 3,639 ft.; jetting.
**Dash & Blanco's No. 1 J. M. O'Brien, Winfield Sur., 466 ft. from N and E lines of 300-acre tract** ..... T.D. 4,396 ft.; 7-in. csg at 4,386 ft.; jetting 600 bbls. daily.
**Floboots Oil Corp.'s No. 1 M. C. Bauer, 330 ft. N line, 1,724 ft from W line, J. M. Ximines Sur.** ..... T.D. 3,487 ft.; flowing gas and S.W.; T.P. 325 lbs., C.P. 650 lbs.
**Floboots Oil Corp.'s No. 3-A J. F. Heard, Ximines Sur., 466 ft. from N line and 1,274 ft. from W line of 150-acre tract, 808 ft. E of No. 1** ..... T.D. 6,062 ft.; P.B. 1,737 ft.; comp. 10,000,000 ft. gas.
**Floboots Oil Corp.'s No. 4-C J. M. O'Brien, 503 ft. from E line and 466 ft. from S line of Blk. 3, Peoples Sur.** ..... W.O.C.; T.D. 1,302 ft.
**Hewitt & Dougherty's No. 3 Lambert, E. W. Harper Sur.** ..... T.D. 4,392 ft.; jetting 40 bbls. day, 10 per cent S.W.; comp.
**Hewitt & Dougherty's No. 4 Lambert, 466 ft. from N line and 507 ft. from W line of Blk. 5, Hardwick Sur.** ..... Drlg. shale 1,151 ft.
**Humble O. & R. Co.'s No. 2 Fannie Heard, 466 ft. S of most southerly N line and 303 ft. E of most westerly line in Crunk Sur.** ..... T.D. 5,947 ft.; reaming.
**Humble O. & R. Co.'s No. 4 Fannie Heard, 1,216 ft. from E line and 466 ft. from N line of lease in Ximines Sur.** ..... Drlg. shale 1,320 ft.
**Humble O. & R. Co.'s No. 4 J. F. B. Heard, 466 ft. from W line of 500-acre lease and 133 ft. NW of R.R. at right angles, or 2,750 ft. from W line and 3,710 ft. from line of Peoples Sur.** ..... T.D. 4,386 ft.; comp. 30 bbls. hr., ⅝-in. choke.
**Humble O. & R. Co.'s No. 2 Welder, 1,322 ft. from E line and 466 ft. from S line of 752-acre tract in the Winfield Sur.** ..... Shale 6,000 ft., T.D.; abnd.
**Stanolind Oil & Gas Co.'s No. 3-A J. M. O'Brien, Peoples Sur., begin at NE cor. of "A" lease, thence W along N line 1,509 ft., thence S at right angles 466 ft., S offset to No. 4-B** ..... S.D. 4,384 ft.
**Stanolind Oil & Gas Co.'s No. 3-B J. M. O'Brien, Winfield Sur.** ..... T.D. 4,393 ft.; comp. 165 bbls. day, ½-in. choke, 300 lbs. tubing, 150 lbs. casing.
**Stanolind Oil & Gas Co.'s No. 3 O'Connor, 1,620 ft. from S line and 466 ft. from W line of 100-acre lease in Crunk Sur.** ..... Drlg. 3,090 ft.
**Stanolind Oil & Gas Co.'s No. 4 O'Connor, 466 ft. from W and S lines of 100-acre lease in Crunk Sur.** ..... S.D. 1,250 ft.
**Texas Co.'s No. 1 James Welder, 2,700 ft. E and 466 ft. N of NW cor. of Continental's 200-acre Welder lease, John T. McGrew Sur. (N of Greta Pool)** ..... T.D. 5,471 ft.; fishing.
**United Prod. Co.'s No. 15 Fox, 330 ft. W of No. 2-A in Wm. Hews and L. Brown Sur.** ..... Drlg. sand 4,737 ft. (no report).
**United Prod. Co.'s No. 14 W. J. Fox et al, 466 ft. from N line and 1,060 ft. W of No. 11 on 848-acre tract in Wm. Hews and L. Brown Sur.** ..... Shale and sand 3,577 ft., T.D.; S.D.
**United Prod. Co.'s No. 3 Lambert** ..... Rigging up.
**United Prod. Co.'s No. 8 Lambert** ..... Derrick.

### CLAY CREEK—WASHINGTON COUNTY

**Sun Oil Co.'s No. 3 Schermer, N. Clay Sur., 330 ft. NW, 330 ft. SW line of lease** ..... Drlg. rock 2,895 ft.
**Sun Oil Co.'s No. 4 Schlettman** ..... Oil sand 1,258 ft.; comp. 10 bbls. per hour.

BOLING FIELD—WHARTON COUNTY

Imperator Oil Co.'s No. 1 S. T. Taylor, 993 ft. SW and 133 ft. SE from N cor. of old Vacuum 50-acre lease and offset Texas' No. 12 Taylor in S. F. Austin Sur.—Drlg. shale 2,529 ft.

## SOUTH LOUISIANA FIELDS

BLACK BAYOU—CAMERON PARISH

Shell Pet. Corp.'s No. 3 State—Rigging up.

CAMERON MEADOWS—CAMERON PARISH

Burton-Sutton Oil Co.'s No. 1 School Land, 2,260 ft. W and 20 ft. N of SE cor. of Sec. 16-14s-13w—T.D. 4,410 ft.; to work over; S.D.

Burton-Sutton Oil Co.'s No. 3 School Land, 155 ft. N and 2,974 ft. E of SW cor. of Sec. 16-14s-13w—T.D. 4,070 ft.; comp. 315 bbls. daily.

Humble O. & R. Co.'s No. 7 Cameron Meadows, 2,495 ft. W and 155 ft. S of NE cor. Sec. 16-14s-13w—T.D. 3,820 ft.; comp. 150 bbls., ¼-in. choke.

Humble O. & R. Co.'s No. 8 Cameron Meadows—Rigging up.

Humble O. & R. Co.'s No. 1-B Cameron Meadows, 250 ft. W and 2,640 ft. S of NE cor. of Sec. 24-14s-14w—Drlg. shale 1,542 ft.

Texas Co.'s No. 1 Miami Corp.—Waiting on rig.

CHOCTAW FIELD—IBERVILLE PARISH

Standard Oil Co.' of Louisiana's No. 6 Myrtle Grove Wilbert, Sec. 52-9s-11e—Rigging up.

EDGERLY—CALCASIEU PARISH

Rex. Pet. Co.'s No. 13 Hunter, 466 ft. N, 90 ft. E of SW cor. of SE ¼—T.D. 4,050 ft.; preparing to bail.

Union Sulphur Co.'s No. 1 La Prairie Narrone, 1,061 ft. N, 250 ft. W of SW cor. SW Sec. 21-9s-11w—Drlg. salt 6,520 ft.

FOUR ISLAND—TERREBONNE PARISH

Texas Co.'s No. 3 State, Four Island—Dredging canals.

GARDEN ISLAND—PLAQUEMINES PARISH

Texas Co.'s No. 11 Garden Island, 4,191 ft. S and 1,504 ft. W of NE cor. Sec. 107-23s-32e—Drlg. 982 ft., shale; no report.

Standard Oil Co. of Louisiana's No. 6 Myrtle Grove Wilbert, Sec. 52-9s-11e—Moving in rig; no report.

GUEYDAN—VERMILLION PARISH

Pure Oil Co.'s No. 6 Alliance Trust, 667 ft. E, 1,787 ft. S line of lease, Sec. 34-11s-1w—Drlg. sandy shale and lime 6,333 ft.

HACKBERRY—CAMERON PARISH

Calcasieu Oil Co.'s No. 2 Hanszen, 400 ft. W and 200 ft. S of No. 1 in Sec. 14-12s-10w—T.D. 6,076 ft.; rigging up to work over; standing.

Gulf Prod. Co.'s No. 14-A Irwin, 300 ft. SE of No. 13-A—Rigging up.

Texas Co.'s No. 10-B State, 1,000 ft. E, 200 ft. N of NE cor. Sec. 13-12s-10w—T.D. 7,287 ft.; to bring in.

Texas Co.'s No. 12-B State, 500 ft. SE of No. 10-B or 1,360 ft. E and 149 ft. S of NE cor. of Sec. 13-12s-10w—Location.

Union Sulphur Co.'s No. 1 Barbee est., 1,720 ft. N line, 320 ft. E of SW cor. Sec. 12-12s-10w—T.D. 7,986 ft.; sidetracking 6,868 ft.

Union Sulphur Co.'s No. 7 Humble lease, 1,010 ft. N, 661 ft. E of SW cor. Sec. 12-12s-10w—T.D. 6,142 ft.; S.D.

Yount Lee Oil Co.'s No. 11 Gulf Land, Sec. 14-12s-10w—T.D. 6,204 ft.; tested S.W.

Yount Lee Oil Co.'s No. 14 Gulf Land—Drlg. shale 3,850 ft.

IOWA—CALCASIEU AND JEFF DAVIS PARISHES

Barnsdall Oil Co.'s No. 1 Caffal, 330 ft. N and E of SW cor. of lease—Drlg. shale 6,643 ft.

Barnsdall Oil Co.'s No. 5 Fontenot, 990 ft. N and 330 ft. W of SE cor. of SW of Sec. 7-9s-6w—Drlg. shale 6,620 ft.

Magnolia Pet. Co.'s No. 6 Wait—Drlg. lime 5,640 ft.

Magnolia Pet. Co.'s No. 7 Wait—Shut down.

Magnolia Pet. Co.'s No. 8 Wait, 998 ft. W and 330 ft. N of SE cor. of 160-acre lease—Drlg. sticky shale 2,832 ft.

Shell Pet. Corp.'s No. 2 Ardoin—Drlg. shale 6,526 ft.

Shell Pet. Corp.'s No. 7 Heyd, 660 ft. out of NW cor. of lease, Sec. 13-9s-7w—Drlg. sand, oil 6,356 ft.

Shell Pet. Corp.'s No. 8 Heyd—Drlg. shale 5,350 ft.

Shell Pet. Co.'s No. 9 Heyd, 998 ft. W and 330 ft. S of NE cor. of 320-acre lease—Digging pits.

Shell Pet. Co.'s No. 4 E. D. Stafford, 990 ft. S and 330 ft. W of NE cor. of lease—Bldg. derrick.

Shell Pet. Corp.'s No. 1 Tuter—Coring shale 6,698 ft.

JENNINGS—ACADIA PARISH

Heywood & Heywood's No. 4 Jennings fee, 900 ft. N and 280 ft. E of SW cor. of Sec. 49-9s-2w—Drlg. 1,551 ft.

Yount Lee Oil Co.'s No. 13 Houssiere-Latrielle, Sec. 47-9s-2w, 300 ft. E of No. 12—Drlg. hard sand 7,340 ft.

LAKE BARRE—TERREBONNE PARISH

Texas Co.'s No. 10 L.L.&E., 4,542 ft. S, 503 ft. W of NW cor. Sec. 30-21s-20—Drlg. 3,689 ft.

Texas Co.'s No. 28-A Lake Barre, 200 ft. SE from No. 17 in Sec. 39-21s-19e—Drlg. anhydrite 1,169 ft.

LEESVILLE—LAFOURCHE PARISH

Diadem Oil Co.'s No. 1 Cenac—Shale 3,095 ft.

Robert Bowles' No. 2 Crosby, 2,408 ft. N and 1,952 ft. E of SW cor. of Sec. 26-21s-22e—Location.

Emerald Pet. Corp.'s No. 2 State of La., Sec. 26-21s-22e—Drlg. sand and gumbo 5,009 ft.; no report.

Emerald Pet. Corp., No. 5 State of La., 1,878 ft. N of No. 1 well in Sec. 26-21s-22e—Location.

Gulf Prod. Co.'s No. 2 Allen Land Co.—Drlg. shale 3,571 ft.

Gulf Prod. Co.'s No. 3 Bernard—T.D. sand 3,708 ft.; W.O.C.

Gulf Prod. Co.'s No. 4 Bernard, 1,086 ft. N and 292 ft. E of SW cor. of L. Bernard 5.8-acre tract in Lot 4, Sec. 26-21s-22e—Location.

Lincoln Oil Co.'s No. 1 Visier—Drlg. shale 1,815 ft.

Lincoln Oil Co.'s No. 6 State, 3,750 ft. N and 1,200 ft. E of SW cor. of Sec. 26—Rigging up.

Texas Co.'s No. 11 L.L.&E., 2,921 ft. S, 1,560 ft. W of NE cor. Sec. 27-21s-22e—T.D. 4,043 ft.; comp. 1,680 bbls., ½-in. choke.

Texas Co.'s No. 15 L.L.&E.—Drlg. shale 2,900 ft.

Texas Co.'s No. 16 L.L.&E.—Rigging up.

Texas Co.'s No. 17 L.L.&E., 1,821 ft. S and 122 ft. E of NW cor. of Sec. 27-21s-22e—Rigging up.

Texas Co.'s No. 18 L.L.&E., 2,638 ft. S and 1,056 ft. E of NW cor. of Sec. 26-21s-22e—Rigging up.

LOCKPORT—CALCASIEU PARISH

Magnolia Pet. Co.'s No. 7 Farquaher, 330 ft. S, 174 ft. W of NE cor. SW NE Sec. 8-10s-9w—T.D. 6,540 ft.; W.O.C.

Magnolia Pet. Co.'s No. 11 Bordages, 660 ft. N, 490 ft. W of SE cor. NE NE Sec. 8-10s-9w—T.D. 7,902 ft.; washing to bottom.

Magnolia Pet. Co.'s No. 19 Miller, Sec. 9-10s-9w—Drlg. shale 5,408 ft.

Strake Oil Co.'s No. 1 Miller, 500 ft. due N of Yount Lee's No. 1 Miller, Sec. 8-10s-9w—Rigging up.

Union Sulphur Co.'s No. 1 Farquaher, 200 ft. S and W lines, NE cor. SW SE Sec. 36-12s-10w, 2-ac. tract—Tested salt water; S.D.; T.D. 7,468 ft.

Union Sulphur Co.'s No. 6 Moss, between Nos. 2 and No. 5—T.D. 1,315 ft.; W.O.C.

PORT BARRE—ST. LANDRY PARISH

Texas Co.'s No. 17 Botney Bay, 1,800 ft. S 8 deg. W, 600 ft. N 82 deg. most southern NE 560 deg. tract, Sec. 4-8s-5e—Drlg. shale 1,985 ft.

STARKS—CALCASIEU PARISH

Union Sulphur Co.'s No. 5 Industrial Lbr. Co., 300 ft. S of No. 4, Sec. 30-9s-12w—Drlg. hard shale and lime 4,361 ft.

SULPHUR—CALCASIEU PARISH

Union Sulphur Co.'s No. 788 fee, 602 ft. S, 1,209 ft. W of C Sec. 29-9s-10w—T.D. 6,103 ft.; sidetracking shale 3,309 ft.

Union Sulphur Co.'s No. 790 fee, 929 ft. S and 802 ft. W of center of Sec. 29-9s-10w—Drlg. sand rock 6,009 ft.

Union Sulphur Co.'s No. 791 fee, 629 ft. N, 907 ft. E of SW cor. Sec. 33-10s-12w—T.D. 5,607 ft.; set whipstock 2,608 ft.; drlg. shale and lime 2,941 ft.

Union Sulphur Co.'s No. 793 fee—T.D. 2,959 ft.; est. 600 bbls. day.

Union Sulphur Co.'s No. 794 fee—Drlg. sandy shale 2,374 ft.

Union Sulphur Co.'s No. 795 fee—Location.

Union Sulphur Co.'s No. 796 fee—Drlg. rock 1,611 ft.

Union Sulphur Co.'s No. 1 Bernard Ulrich, 76 ft. out of SW cor. Sec. 19-9s-10w—T.D. 5,738 ft.; set whipstock to side rack.

SWEET LAKE—CAMERON PARISH

Pure Oil Co.'s No. 12 Yount Lee fee, 800 ft. S of No. 11, in line with Nos. 9 and 10, Sec. 12-13-3w—Drlg. sticky shale 7,226 ft.

WHITE CASTLE—IBERVILLE PARISH

Shell Pet. Corp.'s No. 8 Wilbert, 717 ft. N 60 deg. 30 min. E from SE of Lot 2 of Fractional Sec. 9, in Sec. 1-11s-12e—Sand 4,573 ft.; S.D.

VINTON—CALCASIEU PARISH

Marrs-McLean's No. 16 Gray—Standing 2,377 ft.

Tri-Oil Co.'s No. 1 Matilda Gray, 38 ft. W, 35 ft. N, of SE cor. NE SW NE Sec. 33-9s-12w—T.D. 3,535 ft.; preparing to run tubing.

Wilson Broach Co.'s No. 11 Wilson strip (workover)—Drlg. sandy shale 3,850 ft.

Wilson Broach Co.'s No. 15 Wilson strip—Drlg. 2,785 ft.

Vinton Pet. Co.'s No. 3 Gordon, Sec. 34-10s-12w, 209 ft. from S line, 50 ft. from W line of 2-ac. tract—Drlg. shale 3,885 ft.

## MISCELLANEOUS WILDCATS

### TEXAS

AUSTIN COUNTY

Gem Oil Co. and Johnson Bros.' No. 1 Haedge, 330 ft. out of Lot No. 1, Blk. 18, in San Felipe de Austin Sur.—T.D. 6,229 ft.; abnd.

R. R. Mitchell's No. 1 H. Schleider, J. F. Fitzgibbons Sur., 300 ft. out NE cor. 96-ac. tract—T.D. 105 ft.; S.D.

Sun Oil Co.'s No. 1 Zetik, 662 ft. from N line and 1,509 ft. from W line of 104-acre tract in S. M. Williams Sur.—Drlg. shale 1,055 ft.

BRAZORIA COUNTY

Danciger O. & R. Co.'s No. 3-A Hunt, 2,100 ft. from E. 2,000 ft. from S lines of Hunt's 1,000-ac. tract in W. C. Carson Sur.—Drlg. 6,764 ft.

Danciger Oil & Ref. Co.'s No. 1-B Hunt, 1,400 ft. from NW line and 1,750 ft. from NE line of 1,600-acre tract in W. C. Carson Sur.—Drlg. 6,780 ft.

Danciger Oil & Ref. Co.'s No. 1 Stark-Brown, 330 ft. out of most easterly NE cor. of lease in Perry & Austin Sur.—Drlg. 3,700 ft.

Shell Pet. Corp.'s No. 2 Haury (Danbury), H.T.&B. R.R. Sur., 720 ft. SE of No. 1 Blakely-Winston—Drlg. sandy shale 5,976 ft.

BRAZOS COUNTY

H. Elliott et al's No. 1 W. F. Odom, near center of 379-ac. tract in SW cor. of Isack Curil Sur.—Cmtd. surface csg. 30 ft.

F. H. Scott's No. 1 Klintworth, I. Curd Sur., 300 ft. from N line, 400 ft. from E line—Drlg. 2,140 ft.

D. W. Young, Jr.'s (H. L. Bleam) No. 1 Harrison, 300 ft. from S and W lines of lease in J. D. Allcorne Sur.—Spudding.

CALHOUN COUNTY

Continental Oil Co.'s No. 1 American Nat. Realty Co., C of NE of Sec. 6, Blk. C—Moving in rig.

Herman Heep Oil Co.'s No. 1 Welder, 7,500 ft. from W line of river—Drlg. shale 5,800 ft.

Herman Heep Oil Co.'s No. 1-B F. Welder—Completed rigging up.

CHAMBERS COUNTY

John H. Carreker's No. 1 B. Weaver, 404 ft. out of SE cor. of lease in A. Weaver Sur.—Drlg. 2,200 ft.

J. E. Jones' No. 1 Canada-Smith Ranch, 356 ft. W and 330 ft. N of NE cor. of W. F. Gau 544-acre tract in J. S. Roberts Sur.—T.D. 6,612 ft.; stuck drill stem; waiting orders.

Miramar Oil Co.'s No. 1 Geo. Stengler, V. Barrow Sur., 3,200 ft. from E line and center of N and S lines of lease—Drlg. 5,400 ft.

COLORADO COUNTY

Coyle-Concord Oil Co.'s No. 1 Nelson, 3,200 ft. SE of NW cor. of section, 2,200 ft. SW at right angles in I.&G.N. Sur.—T.D. 4,052 ft.; rigging up to deepen.

Union Central Oil Co.'s No. 1 Mann, 620 ft. from W line and 330 ft. from N line of 20-acre tract in J. L. Dugat Sur.—Location.

FAYETTE COUNTY

Berry & Hays' No. 1 Otto Steinhauser, 660 ft. from N and E lines of 75-acre tract in J. Schrader Sur. (4 miles SW of Muldoon)—T.D. 2,265 ft., water sand; abnd.

Colorado Oil Co.'s No. 1 Anders—Drlg. gumbo and shale 2,562 ft.

FORT BEND COUNTY

Edwards Drlg. Co.'s No. 1 H. Hausler, 780 ft. S of NE cor. of 103-acre tract, 510 ft. W of E line, Wickson Sur.—Drlg. heaving shale 3,650 ft.

Porter & Blanchard's No. 2 Wheat—Odor oil 2,528-33 ft.; T.S. 2,928 ft.; T.D. 2,969 ft., S.W.

GALVESTON COUNTY

George K. Spoor's No. 1 Maco Stewart, 1,626 ft. N of SE cor. of Alex Farmer Sur. and 1,175 ft. E in W. K. Wilson Sur. (4 miles S of Dickinson)—T.D. 570 ft.; set surface pipe 420 ft.

Humble O. & R. Co.'s No. 1 Maco Stewart, C of E and W lines of 400-acre tract in John Sellars Sur., S of Dickinson Bayou, 3 miles N of Spoor well—Location.

GRIMES COUNTY

Clark & Dodd's No. 1 Murry, 150 ft. W line, 300 ft. S line, Anderson Sur.—S.D. 1,305 ft.

W. D. Roan et al's No. 1 D. C. Kelly, 1,532 ft. from N line and 168 ft. from E line of U. Sanders Sur., near Carlos—Derrick.

HARDIN COUNTY

Greer & Frazier's No. 1 O. Sternberg, 660 ft. out of SW cor. of E 384 acres in H.&T.B. Sur. No. 283—T.D. 6,242 ft.; stuck drill stem.

Resource Oil Corp.'s No. 1 Sternberg Oil Co., C. of G. Dorsey No. 3 Sur., Abst. 193—Derrick.

HARRIS COUNTY

Glenn H. McCarthy's No. 2 Preston on 80 ac. in Sec. 2, Blk. 2, 4 miles W of LaPorte—Location.

Golding & Murchison's No. 1 Clappert, W.C.R.R. Sur., Blk. 4, Sec. 9, 1,350 ft. from E line, 330 ft. from N line—T.D. 6,639 ft.; P.B. 6,400 ft. to perforate csg.

J. A. Hodges' No. 1 Scott, 200 ft. S, 900 ft. W of intersection of Crosby Huffman, F. Rankin Sur.—T.D. 6,275 ft.; S.D.

W. U. Paul's No. 1 E. M. House, 2,200 ft. N and 1,000 ft. E of NE cor. of E. Benson Sur. in M. Magruder Sur.—Derrick.

J. E. Seiber's No. 1 Tyrell & Gareth, 2,800 ft. from E line and 2,400 ft. from N line of survey, Lot 18, Blk. 20, Highland Subd., Ashbell Smith Sur.—T.D. 880 ft.; W.O.C.

HOUSTON COUNTY

Murmac Oil Co.'s No. 1 G. L. Murray & Son, John Durst Sur.—Shale 3,436 ft.; S.D.; temp. abnd.

JACKSON COUNTY

Atkins & O'Neil's No. 1 Ward (Davis), C Lot 93, I.&G.N. Sur. No. 18, Blk. 8—Drlg. 6,567 ft., water sand.

Encio Gas Co.'s No. 1 Toney, 150 ft. out of NW cor. of Toney's 1,064-ac. tract in Raymor Musquiz Sur.—T.D. 5,582 ft.; comp. 500 bbls. day, grav. 33 corrected, T.P. 800 lbs., C.P. 800 lbs.

JASPER COUNTY

Louis Franklin's No. 1 Cartwright, 360 varas E line and 740 varas S line of Lot 19, Edward Legrande Sur.—Derrick.

JEFFERSON COUNTY

Lucky Strike Oil Co.'s No. 1 Walker, D. Easley Sur., 2,100 ft. N, 1,400 ft. E of NW cor. of Lot No. 13—S.D. 1,708 ft., shale and lime.

**Sun Oil Co.'s No. 1 H. Long, 1,500 ft. N line, 990 ft. E line of lease** ..... T.D. 7,138 ft.; sidetracking 3,424 ft.

LIBERTY COUNTY

**Extension Oil Co.'s No. 1 J. A. Lovett, 200 ft. from E and 600 ft. from S line of lease, P. P. Deevers Sur.** ... Drlg. gumbo 1,625 ft.
**Gulf Prod. Co.'s No. 2 Kirby, John Pleasants Sur., 1,866 ft. S of No. 1** ..... Drlg. hard shale 8,683 ft.
**Gulf Prod. Co.'s No. 4-C Kirby, 7,100 ft. S and 1,383 ft. E of NW cor. of John Pleasant Sur.** ..... Drlg. hard shale and lime 5,748 ft.
**Liberty & Independent Oil Co.'s No. 1 J. M. Neal, 3,550 varas from E line and 500 varas from N line of Samuel Strong Sur** ..... Derrick; temp. abnd.
**H. Sample's No. 1 Security Trust Co., 466 ft. from S and E lines of N 600 ac. of Lot 3 of H. Sample Subd. of J. Faulk Sur.** ..... Drlg. plug 1,120 ft.
**Thomas et al's No. 1-A Eicke, 660 ft. from W line and 2,350 ft. from S line of tract in Green Sur.** ..... T.D. 5,058 ft.; D.S. test 5,025 ft. ¼-in. choke, 5 min., 8 thribbles mud; S.D. orders.
**Turnbull & Irwin et al's No. 1 N. Hildebrandt, W. Whitlock Sur., C of E ½ of survey** ..... Drlg. hard rock 6,260 ft.

MADISON COUNTY

**Paul Edwards et al's No. 1 Fulcher, 1,161 ft. from E line and 1,633 ft. from N line of Fulcher Sur.** ..... Derrick.
**Paul Edwards et al's No. 1 L. M. Peters, Mahala Wilkinson Sur., 400 ft. from N line and 300 ft. from W line of 132-acre tract** ..... Drlg. shale and sand 5,265 ft.

MATAGORDA COUNTY

**Dr. Griffith's No. 1 fee, 3,000 ft. from N line and 3,000 ft. from W line of Wm. E. Bell Sur.** ..... Derrick.
**Oils Consolidated's No. 2 Hawkins, 200 ft. due NE of No. 1 well** ..... T.D. 5,530 ft.; standing.
**Skelly Oil Co.'s No. 1 Cobb, M. Cummins Sur., 434 ft. from E, 1,506 ft. S of F. G. Cobb's 167-ac. tract** ... T.D. 7,186 ft.; P.B. to 7,076 ft.; 17/64-in. choke put on bottom of tubing; flowed 198 bbls. distillate 24 hrs.; S.D. for storage.
**United North & South Dev. Co.'s No. 1 Unit 4, Buckeye farm, J. C. Keller league, 214 ft. N line and 202 ft. E line of lease** ..... T.D. 7,871 ft.; show oil; swab. oil, gas and water.
**United North & South Dev. Co.'s No. 1 Unit 6 (No. 2 Stoddard), 25 ft. each way out of NW cor. of Lot 19, Buckeye townsite** ..... T.D. 9,457 ft.; circulating; stuck drill stem.
**United North & South Dev. Co.'s No. 1 Unit No. 58, 250 ft. N and 200 ft. W of SE cor. of Unit No. 58** ..... Derrick.

MONTGOMERY COUNTY

**Baker et al's No. 1 Benker, D. James Sur.** ..... O.T.D. 4,921 ft.; sidetracked 3,823 ft.; sand 4,645-67 ft.; prep. to make D.S. test.
**Cooper & Smith's No. 1 Post, Daniel Roper Sur.** ..... T.D. 2,827 ft.; washing.
**Deering & Frazier's No. 1 Hicks, 660 ft. E and W of NE cor. 565-acre tract, T. Taylor Sur.** ..... Rigging up.
**Humble O. & R. Co.'s No. 1 Texas Long Leaf Lumber Co., 466 ft. out of SE cor. of 2,000-acre tract in Walker County, S.L. Sur.** ..... Rigging up.
**McElroy Oil Corp.'s No. 1 Grogan Cochran Lbr. Co., 6,943 ft. from N line and 900 ft. from W line of 100-acre tract in P. V. Hamblin Sur.** ..... Drlg. shale 4,600 ft.
**Steen Drlg. Co.'s No. 1 Long Bell Lbr. Co., 440 ft. S and E from NW cor. of Wilson Barker Sur.** ..... Top Cockfield 5,815 ft.; sand 5,867-69 ft., sand 5,873-77 ft.; D.S. test 5,855-77 ft. showed 350 lbs. pressure with 2 gals. dist. and 2 gals. mud in 4 min.; coring 5,981 ft.; D.S. test 5,873-84 ft., 575 lbs. pressure, 15 min., 1 joint brown dist., ¼-in choke on top, ⅝-in. choke on bottom; D.S. test 6,016-53 ft.; showed 23 thribbles salt water. 11 min., 250 lbs.; sidetracked while running pipe; P.B. 2,300 ft.; drlg. shale 4,450 ft.

NACOGDOCHES COUNTY

Dick Schwab's No. 1 Rambin, J. Simpson Sur. ..... T.D. 4,850 ft.; to plug back to Wolfe City sand 3,689-3,725 ft. and test.

ORANGE COUNTY

**Blue Line Oil Co.'s No. 1 Godwin, Richard Ballew Sur., 300 ft. from E line and 150 ft. from NE line of Godwin 20-acre tract** ..... T.D. 900 ft.; washing.
**Texas Louisiana Oil Co.'s No. 1 Starks, 2,450 ft. N of NW cor. M. Delano Sur. 68, 10,500 ft. E at R/A** .... Drlg. shale 3,702 ft.

POLK COUNTY

Howard Dailey et al's No. 1 Z. B. Knox, 1,450 ft. W and 1,920 ft. S of NE cor. of F. Chairs Sur., 1½ mile NE of Corrigan ..... Derrick.

REFUGIO COUNTY

**C. B. Bunte's No. 1 Rook, 12,400 ft. from W and 11,500 ft. from N line of Antonio De Lavina Sur.** ..... Rigging up.
**Cox et al's No. 1 F. W. Bissett, J. Crockett Sur.** ..... S.D. 3,659 ft.
**Heard-Holland Oil Co.'s No. 1 Peck, 366 ft. N and W out of NW and SW of Bonnie View Subd.** ..... T.D. 4,534 ft., to take another core and make D.S. test.
**Humble Oil & Ref. Co.'s No. 13 O'Connor, 933 ft. NE of No. 12 and 933 ft. NW of No. 11 on 5,545-acre tract in John Keating Sur.** ..... T.D. 3,190 ft.; W.O.C.
**G. Jeffries' No. 1 James F. Power, 759 ft. from N and 1,812 ft. from E lines of 500-acre lease in J. J. Garza and J. Vidaurri Sur.** ..... S.D. 1,010 ft.

SAN AUGUSTINE COUNTY

**Fidelity Exploration Co.'s No. 1 Bryan & Flourney, 1,926 ft. from N and 725 ft. from E lines of Sec. 14, S.P.R.R. Sur.** ..... T.D. 2,005 ft.; S.D. to clear title.

SAN JACINTO COUNTY

**Darby Jones' No. 1 McBee** ..... Drlg. shale 2,910 ft.

VICTORIA COUNTY

C.R.&G. Drlg. Co.'s No. 1 R. C. Roos, 486 ft. from N line and 1,666 ft. from E line of tract in M. A. Castanon Sur. ..... Drlg. blue shale 3,850 ft.
Humble O. & R. Co.'s No. 1 Mitchell, 1,401 ft. from NE and NW lines of 5,000-acre tract in E. Benavides Sur. ..... Rigging up.
**Markle et al's No. 1 Dunlap, Manuel Zepeda Sur., 9,550 ft. along NW line of survey from most northerly NE cor. and 1,475 ft. SE at R/A** ..... T.D. 2,871 ft.; temp. abnd.
Petrol Corp.'s No. 1 John Machalic, 1,330 ft. out of S cor. of 135-acre tract, Rafael Mancha Sur. ..... Drlg. 260 ft.
**Wm. Quick's No. 1 Tom Joshua, 330 ft. out of NW cor. of Blk. 21, F. G. Hidalgo Sur.** ..... Abnd. location.
**Texas Co.'s No. 8 McFaddin, A. J. Gray Sur., 6,600 ft. N of S line, 1,383 ft. from E line of NE cor.** ..... T.D. 6,459 ft.; cmtd. plug at 3,430 ft.

WALLER COUNTY

**Amerada & Stanolind Oil & Gas Co.'s No. 1 Mary Mannor, C of Sec. 93, Blk. 1, H.&T.C. Sur.** ..... Drlg. sand and shells 3,790 ft.
**De Armand's No. 1 Vaughn, 1,200 ft. N of Kirby's No. 1 Vaughn, J. McFarland Sur. No. 46** ..... T.D. 505 ft.; W.O.C.

WHARTON COUNTY

**Pure Oil Co.'s No. 1 W. Garrett, 4,456 ft. SE and 1,690 ft. NE of W cor. of Sec. 28** ..... T.D. 6,543 ft.; abnd.
**Pure Oil Co.'s No. 2 Lancaster, 1,328 ft. NW of SE line and 1,476 ft. SW of NE line of tract in Sec. 28, Morris & Cummings Sur.** .. ..... T.D. 5,147 ft.; run 9⅝-in. csg.
**Pure Oil Co.'s No. 2 Stewart, Morris & Cummings Sur., Sec. 25, 990 ft. out of SW cor. of 160 acres** ..... T.D. 7,523 ft.; W.O.C.; crooked hole.
**Pure Oil Co.'s No. 1 Wallace Houston, 858 ft. SE of NW line, 1,690 ft. NE of SW line, Sec. 28 (T. W. Heard Sur.)** ..... T.D. 6,460 ft.; tested S.W.; preparing to abandon.

## SOUTH LOUISIANA

ACADIA PARISH

**Edwards Drlg. Co.'s No. 1 Daigle, NE cor. of SE of Sec. 24-7s-1e** ..... Rigging up.
**Rhodes Drlg. Co.'s No. 1 Latrell** ..... S.D. 2,280 ft.
**Superior Oil Co.'s No. 1 F. O. Hernandez, 990 ft. W., 990 ft. S of NE cor. SE Sec. 34-8s-3e** ..... T.D. 8,916 ft.; perforation 7,845-50 ft.; flowing 31½ bbls. hour, 12/64-in. choke, 1,360 lbs. pressure.

AVOYELLES PARISH

**Hass & Stokes' No. 1 Hass, from NE cor. SE Sec. 28 go along E line of Sec. 28 2,486 ft. to point on highway, thence 84° E on highway for 286 ft., thence N 87° E for 4,426 ft., then N 45° E 226 ft.** ... Rigging up.

BEAUREGARD PARISH

**Federal Pet. Co.'s No. 1 Lutcher-Moore, 467 ft. S and 467 ft. E of the NW cor. of Sec. 4-6-12** ..... Location.
**Humble Oil & Ref. Co.'s No. 1 Long Bell, 200 ft. E of W line and 2,640 ft. S of N line of Sec. 11-5s-7w** .... Drlg. shale 9,000 ft.
**F. W. Martin's No. 1 J. E. Cochran, SE cor. of NE of Sec. 34-4s-12w (W part of county and 6 miles S of Merryville)** ..... Coring sand with streaks lime 3,820 ft.

CALCASIEU PARISH

**Fred Oil Co.'s No. 1 Faiszt, 566 ft. N, 300 ft. W of SE cor. of NW of SE Sec. 26-8s-10w** ..... Gumbo 2,400 ft.; S.D.
**Union Sulphur Co.'s No. 1 Barbe, 2,681 ft. W, 2,647 ft. S of NE cor. Sec. 1-9s-8w** ..... Fishing; hard shale 8,135 ft.

IBERIA PARISH

**Y. D. Spell's No. 1 Bernard, 5,138 ft. SW cor. along western boundary line, then in NE direction 1,140 ft. along N line of Bernard land, 52 ft. S of well in Sec. 54-12s-7e** ..... S.D. 2,850 ft.

JEFFERSON DAVIS PARISH

**Shell Pet. Corp.'s No. 1 Kratza, 660 ft. S, 330 ft. W of NE cor. NW Sec. 12-9s-4w** ..... Brittle shale 8,508 ft.; S.D.
**Tide Water Oil Co.'s No. 1 Mrs. A. Bourgeois, 250 ft. E and 205 ft. S of C of Sec. 28-9s-5w** ..... Spud.

LAFOURCHE PARISH

**R. L. Gay, trustee's No. 1 Godchaux, 3,920 ft. N and 1,746 ft. E in common cor. of Lots 34 and 26, Twp. 15s-19e** ..... Moving in rig.
**Southern Sulphur Corp.'s No. 1 D. L. Lagraize, 800 ft. E of NW cor. of Lot 7, thence 250 ft. S of Sec. 26-21s-22e** ..... Spudded and S.D.

PLAQUEMINES PARISH

**Venice Corp.'s No. 1 Burras** ..... S.D. 40 ft.

ST. BERNARD PARISH

**Southern Sulphur Corp.'s No. 1 Lake Lery, 400 ft. W. 500 ft. N, SW cor. Sec. 28-13s-15e** ..... Gumbo 2,867 ft.; S.D.

ST. LANDRY PARISH

**Bailey Gaunce's No. 1 Lewis, 300 ft N and E of SW cor. of NW of NE of Section 29-5s-6e (workover)** ... T.D. 5,017 ft.; S.D.
**H. H. Hotchins Lbr. Co.'s No. 1 Whiteman Lbr. Co., 250 ft. out of SW cor. NE Sec. 15-5s-6e** ..... S.D. 3,696 ft.

ST. MARTIN PARISH

**Standard Oil Co. of Kansas' No. 1 E. B. Hopkins, Sec. 33-10s-6e** ..... T.D. 7,963 ft.; abnd.
**Texas Co.'s No. 6 St. Martin Land Co., 660 ft. S and 500 ft. W of NE cor. SE Sec. 17-8s-7** ..... Drlg. gumbo 4,408 ft.

ST. MARYS PARISH

**Black et al and Edwards Drlg. Co.'s No. 1 Chetimancha. Sec. 34-13s-9e, 219-acre tract approximately 500 ft. at right angles SE and SW lines of tract** ..... T.D. 1,200 ft.; W.O.C.

TERREBONNE PARISH

**Texas Co.'s No. 1-B State-Bay Junop, 2,200 ft. N, 950 ft. E of SW cor. Sec. 27-21s-14e** ..... Salt 6,625 ft., T.D.; P.B. 4,060 ft.; drlg. shale 4,858 ft.
**Texas Co.'s No. 7 Bay St. Elaine** ..... Drlg. shale 3,033 ft.
**Texas Co.'s No. 11 Lake Pelto, 1,600 ft. SW of No. 5** ... Driving piling.
**Texas Co.'s No. 10 State-Caillou Island** ..... Drlg. shale 6,090 ft.
**Texas Co.'s No. 10 State-Dog Lake** ..... Drlg. lime 1,505 ft.
**Texas Co.'s No. 3 School Board, 2,630 ft. S and 1,384 ft. E of NW cor. of Sec. 16-22s-18w** ..... Drlg. shale 758 ft.

VERNON PARISH

**Robt. K. Williams, Jr.'s No. 1 Llano Del Rio, 1,185 ft. S. 1,000 ft. W of NE cor. Sec. 7-1n-9w** ..... Rigged up and S.D.

## Wildcat Operations in Louisiana-Arkansas

(Continued from Page 142)

**Zeiger & Bacon's No. 1 Crossett, 400 ft. N, 300 ft. W, SE cor. Sec. 41-23-6e** ..... Drlg. 2,498 ft.

NATCHITOCHES PARISH

**Penn Sou. Pet. Co., Inc.'s No. 1 Chopin Lbr. Co., 275 ft. N and W, SE cor. NE SW Sec. 4-5n-5w** ..... Drlg. 50 ft.

RED RIVER PARISH

**Kincaid & Kelly's No. 1 Ober, 315 ft. N, 257 ft. W, SE cor. NW SE Sec. 5-14-10** ..... Set 10-in. 84 ft.
**A. D. Mytiler's No. 1 La. Delta Pecan Co., 1,700 ft. N, 160 ft. E, SW cor. Sec. 27-13-11** ..... Testing 802 ft.
**Oynett et al's No. 1 Thomas, 330 ft. S and E, C Sec. 34-13-8** ..... S.D. for fuel 740 ft.

SABINE PARISH

**D. D. Alexander's No. 1 Brown est., 330 ft. N and E, SW cor. Sec. 9-9-11** ..... Drlg. 2,563 ft.
**J. F. Anderson's No. 1 Burkett, 135 ft. N, 655 ft. E, SW cor. NW Sec. 10-9-13** ..... W.O.S.R. 1,993 ft.
**J. W. Bettis et al's No. 1 Frost Lbr. Ind., 330 ft. S and W, NE cor. SW Sec. 15-9-13** ..... Rigging up.
**R. B. Campbell et al's No. 1 Cook Land Co., 150 ft. N, 300 ft. W, SE cor. NW NW Sec. 35-10-13** ..... W.O. csg. 1,586 ft.
**G. H. Collins' No. 3 Cranford, 330 ft. S and E, NW cor. SW SE Sec. 20-9-13** ..... Recmtng. csg. 1,461 ft.
**Helena O. & G. Co.'s No. 6 Burkett, 330 ft. S and E, NW cor. NE Sec. 10-9-13** ..... Set 10-in. 47 ft.; set 6-in. 1,426 ft.
**Lula M. Layton's No. 2 Henderson, 330 ft. S and W, NE cor. NW NW Sec. 29-9-13** ..... Comp. flowing 50 bbls. 1,661 ft.
**Zan Lloyd's No. 1 Henderson, 330 ft. N and W, C Sec. 29-9-13** ..... W.O.S.R. 2,031 ft.
**H. C. Maulding's No. 2 Alford, 330 ft. N and E, SW cor. NW NW Sec. 18-7-10** ..... Used acid 2,750 ft.
**Dr. O. B. Hicks' No. 1 Neal, SE SW SE Sec. 18-9-12** .... Set 10-in. 40 ft.
**Miles & Strickland's No. 1 McGee, 17 ft. S, 26 ft. E, NW cor. Lot 18, Sec. 9-9-13** ..... S.D. for fuel 950 ft.
**John W. Moffett's No. 1 Logan Oil Co., Sec. 3-9-13** ..... W.O.S.R. 1,985 ft.
**Parker et al's No. 1 Henderson, 330 ft. S and E, NW cor. SE NE Sec. 29-9-13** ..... Set 10-in. 42 ft.; drlg. 1,250 ft.
**L. L. Posey's No. 3 Burkett, 330 ft. S and E, NW cor. NE NW Sec. 10-9-13** ..... W.O.S.R. 1,934 ft.
**W. E. Rowe et al's No. 1 Craig, 330 ft. S and E of center Sec. 22-9-13** ..... S.D. 1,200 ft.
**J. A. Stinson's No. 1 Whitney Corp., 330 ft. S and W, NE cor. Sec. 8-9-13** ..... W.O.S.R. 2,014 ft.
**Stumpff & McFall's No. 1 Paul estate, Sec. 10-9-13** .... Tested S.W.; S.O. 1,976 ft.
**Windsor Oil Co.'s No. 2 Barr, 330 ft. N and E, SW cor. NW Sec. 15-9-13** ..... Location.

XUM

RAPIDES PARISH

Ben Banner's No. 1 Bentley Lbr. Co., 2,640 ft. E, NW cor. Sec. 11-4n-5w ..... Drlg. 1,020 ft.

Evans & Collingsworth's No. 1 Hickman, 330 ft. S and E, NW cor. Sec. 40-4-1e ..... S.D. 2,130 ft.

UNION PARISH

Ward & Jones' No. 1 Miller, 330 ft. S and E, NW cor. SW SW Sec. 16-21-2e ..... S.D. 2,107 ft.

WEBSTER PARISH

I. G. Abney Oil Co.'s No. 1-B B. L. Slack, 330 ft. E, 660 ft. N, SW cor. SE Sec. 36-23-11 ..... Comp. pumping 50 bbls., 2,736 ft.

## Arkansas

CONWAY COUNTY

Sou. Union Gas Co.'s No. 1 Feldman, C SW SW Sec. 6-5n-17w ..... W.O. 8¼-in. csg. 2,504 ft.

HEMPSTEAD COUNTY

A. H. Bagnelle's No. 1 Trattner & Rhinehart, Sec. 2-13-26. S.D. 1,206 ft.

LAFAYETTE COUNTY

Douglas Lawn's No. 1 Camp, 330 ft. S and W, NE cor. SW SE Sec. 14-15-23 ..... Drlg. 452 ft.

George W. Harper's No. 2 Bodcaw, 150 ft. S, 550 ft. E NW cor. SW NW Sec. 16-15-22 ..... S.D. 1,216 ft.

C. V. Lenz' No. 1 Foster, 330 ft. S, 150 ft. E, C Sec. 9-15-25 ..... Set 10-in. 203 ft.; drlg. 1,050 ft.

MILLER COUNTY

Duluth-Ark. Oil Co.'s No. 2 Beck, 330 ft. S and E, NW cor. SE SW Sec. 34-15-26 ..... Arranging to pump with jack 2,307 ft.

Fitzwater et al's No. 1 Norson, SW cor. SE SW Sec. 26-15-27 ..... S.D. 2,177 ft.

King Oil Corp.'s No. 1 C. H. Schroder, 200 ft. N, 330 ft. E, SW cor. SW NE Sec. 24-14-28 ..... S.D. 1,857 ft.

C. E. Murdock's No. 1 E. L. Beck, 330 ft. N and E, SW cor. SE SE Sec. 33-15-26 ..... Drlg. 2,780 ft.

Frank Roe's No. 1 Olivet, NE cor. NE SE Sec. 4-16-26. Drlg. 1,280 ft.

Texarkana Oil Corp.'s No. 1 H. E. Beck, 330 ft. N and E, SW cor. SW SW Sec. 34-15-26 ..... Set 6-in. 2,918 ft.

Lee Timberlake et al's No. 1 E. L. Beck, 150 ft. N and E, SW cor. NW SE Sec. 33-15-26 ..... Set 10-in. 147 ft.

J. K. Wadley's No. 1 Deckerman, 200 ft. N, 330 ft. E, SW cor. NW Sec. 24-17-27 ..... Drlg. 2,500 ft.

E. L. Young, Tr.'s No. 1 Patterson, SE cor. SE NE Sec. 5-19-28 ..... S.D. 3,666 ft.; curing titles.

OUACHITA COUNTY

L. L. McDonald's No. 1 J. A. Robertson, 200 ft. S and E, NW cor. NE NW Sec. 25-15-16 ..... W.O.S.R. 2,092 ft.

UNION COUNTY

E. R. Henderson's No. 2 J. H. Ogden, 330 ft. S and E, NW cor. SW SE Sec. 32-18-14 ..... Arranging to use acid 2,208 ft.

E. R. Henderson's No. 1 Vines, 330 ft. N and W, SE cor. SW SE Sec. 29-18-14 ..... P.B. to 2,161 ft.

Mrs. R. K. Jones et al's No. 1 J. Davis, 330 ft. N and W, SE cor. NW NW Sec. 28-18-14 ..... Set 10-in. 120 ft.

Tubal Pet. Co.'s No. 1 Gaddy, 340 ft. N and E, SW cor. SE NW Sec. 14-17-14 ..... S.D.; W.O. 3,416 ft.

## Mississippi

FRANKLIN COUNTY

E. R. Ratcliff's No. 1 Banks, SE cor. SE Sec. 20-5n-2e.. Set 10-in. 422 ft.; drlg. 950 ft.

GREENE COUNTY

United Gas Public Service Co.'s No. 1 Davis, C NW Sec. 30-1n-5w ..... S.D. 5,960 ft.

ISSAQUENA COUNTY

Pelican Oil & Gasoline Co.'s No. 1 Steel Bayou Corp., 400 ft. N, 350 ft. E, SW cor. NW Sec. 14-12n-8w.... Rigging up.

PIKE COUNTY

B. D. Findley et al's No. 1 State Bank, C SE Sec. 28-3n-7e ..... Drlg. 3,650 ft.

SIMPSON COUNTY

Beavy Corp.'s No. 1 R. J. Beavy, C SW Sec. 24-2n-4e.. Set 6⅝-in. 2,160 ft. (corrected)

WALTHALL COUNTY

Mutual O. & Gas Co.'s No. 1 Boyd, Sec. 24-2n-9e, SW cor. SW SE ..... Moving in rig.

Orbet Drlg. Co.'s No. 1 R. L. Parker, 300 ft. E CWL, Sec. 14-14-1e ..... S.D. 3,169 ft.

## Louisiana-Arkansas Proven Areas

### North Louisiana

CADDO—RODESSA

| Company, well, farm name, section and block— | Remarks: |
|---|---|
| R. W. Norton's No. 1-B J. B. French, 660 ft. S and E, NW cor., Sec. 34-23-16 | Testing 6,717 ft. |
| United Gas Pub. Ser. Co.'s No. 1 Deer, 1,320 ft. N and W, SE cor. Sec. 24-23-16 | Drlg. 4,531 ft. |

SABINE PARISH—ZWOLLE

| | |
|---|---|
| Alexander & Cane's No. 1 Fogman, SE cor. N½ SW NE Sec. 13-7-11 | Drlg. 700 ft. |
| Ivan A. Allen's No. 1 La. Long Leaf, 330 ft. N and W, SE cor. NW SE Sec. 12-7-11 | Rigging up. |
| Dyer et al's No. 1 McCollister, 330 ft. S and E, NW cor. SW NE Sec. 24-7-12 | S.D. 1,100 ft. |
| Foster & Hartman's No. 1 Bowman-Hicks, 330 ft. S and E, NW cor. NW NE Sec. 10-7-12 | Set 10-in. 47 ft. |
| E. D. Holcomb's No. 1 Porter, 330 ft. S, 330 ft. W, NE cor. SE Sec. 7-7-11 | Set 6-in. 2,312 ft. |
| M. J. Kissick's No. 1 Barr, 350 ft. S and W, NE cor. SW SE Sec. 6-4-11 | Repair rig 2,414 ft. |
| Magnolia Pet. Co.'s No. 2 Gindratt, 330 ft. N, 320 ft. E, SW cor. SE Sec. 30-8-11 | T.A. 2,485 ft. |
| H. C. Maulding's No. 2 DeLatin, 330 ft. S and E, NW cor. NE SE Sec. 3-7-11 | Rigging up. |
| Monroe Prod. Co.'s No. 4 Sabine Lbr. Co., 330 ft. N and E, SW cor. SE NW Sec. 7-7-11 | P.B. to 2,426 ft.; using acid. |
| Geo. L. Pace's No. 5 Greer, 330 ft. S and E, NW cor Sec. 32-8-11 | Set 10-in. 61 ft.; drlg. 575 ft. |
| Geo. L. Pace's No. 1 Garner, 330 ft. N and W, SE cor. SW NE Sec. 15-7-11 | Set 6-in. 2,389 ft. |
| Pelican Nat. Gas Co.'s No. 31 La. Long Leaf, 311 ft. N, 323 ft. E, SW cor. Sec. 29-8-11 | Rigging up. |
| Pelican Nat. Gas Co.'s No. 29 4-L Co., Sec. 29-8-11.. | Used acid 2,660 ft. |
| Pelican Nat. Gas Co.'s No. 30 La. Long Leaf, 311 ft. S, 323 ft. W, NE cor. Sec. 31-8-11 | Set 6-in. 2,212 ft. |
| Service Drlg. & Roy. Co.'s No. 1 Byrd, 400 ft. N, 500 ft. W, SE cor. SW NE Sec. 7-7-10 | Dry and abd. 2,827 ft. |
| Ben F. Smith's No. 1 Sabine Lbr. Co., 330 ft. N and W, SE cor. NE NE Sec. 12-7-12 | Set 10-in. 60 ft.; drlg. 1,475 ft. |
| Tex-La-Ark Oil Co.'s No. 1 Pickering Lbr. Co., Sec. 8-8-12 | S.D. 1,050 ft.; repair boiler. |
| Texas Co.'s No. 7 Stille, 330 ft. S, 330 ft. E, NW cor. SW Sec. | Set 10-in. 61 ft.; drlg. 997 ft. |

SABINE PARISH—PLEASANT HILL

| | |
|---|---|
| Bridges Co., Inc.'s No. 1 Moore, CEL NW NW Sec. 5-9-12 | T.A. 2,170 ft. |

### Mississippi

HINDS COUNTY

| | |
|---|---|
| Alexander & Weaver's No. 1 Simpson, Sec. 25-5n-1e.... | Set 9-in. 776 ft. |

RANKIN COUNTY

| | |
|---|---|
| Benedum & Trees' No. 1 Southern Dev. Co., Sec. 35-4n-1e | Dry and abd. 6,451 ft. |
| Ferguson, Fuller & Metz' No. 1 Ammons, 350 ft. E and S, NW cor. NW NW Sec. 35-3n-3e | Partly rigged and S.D. |

### East Texas (Border Counties)

CASS COUNTY

| | |
|---|---|
| United Gas Public Service Co.'s No. 1 Walton, John Coleman Sur. | Rigging up. |
| R. K. Kamon et al's No. 1 Savage, Mary Patterson Sur... | Drlg. 2,450 ft. |

HARRISON COUNTY

| | |
|---|---|
| R. C. Payne et al's No. 1 Lowery, E. D. Spain Sur. | Drlg. 3,705 ft. |

PANOLA COUNTY

| | |
|---|---|
| Acre & Rotunda's No. 1 Burnett Lbr. Co., J. H. Mallory Sur. | Drlg. 1,700 ft. |
| Givens & Holloway's No. 1 Wooten Est., Winnie Mann Sur. | Drlg. 615 ft. |
| R. W. Price's No. 1 Crawford, J. A. Williams Sur. | Rigging up. |

SHELBY COUNTY

| | |
|---|---|
| Bush Oil Int.'s No. 1 Windham, W. M. Blackburn Sur.. | S.D. 3,366 ft. |
| Turner & Neil's No. 1 Pickering Lbr. Co., P. W. Harvey Sur. | Set 10-in. 65 ft. |

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